Cultural Landscape Report:
Dumbarton Oaks Park, Rock Creek Park

Part 2: Design Development

U.S. Department of the Interior

National Park Service

National Capital Region

Cultural Landscape Program

Washington, D.C.

September 2003 | September 2011 Revised

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Prepared By:

Maureen DeLay Joseph, *Project Manager, National Capital Region*

Kay Fanning, *Project Historian, University of Maryland*

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Cover Illustration: The south stream path and Three Bridges Falls as seen in the 1930s in its prime. (Dumbarton Oaks, Studies in Landscape Architecture, Photo Archive, #13.30).

United States Department of Interior Mission Statement: As the Nation's principal conservation agency, the Department of Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

National Park Service Mission Statement: The National Park Service preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education and inspiration of this and future generations. The Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

Document Number: D-119

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Tara to write?

Acknowledgments

Over fifteen years in the making, the final production of the Part 2: Design Development for Dumbarton Oaks Park Cultural Landscape Report completes this stage but initiates another chapter in my involvement with the future management of Beatrix Farrand's masterpiece.

Many people were involved in the development of this document, starting with the initial 1997-2000 CLR team which included myself (project manager, National Capital Region [NCR]), Kay Fanning (project historian, University of Maryland), and Mark Davidson (project landscape architect, US/ICOMOS), who crafted the design alternatives and initial treatment plan narrative. During the early and interim stages of the design development from 1998-2009, Darwina Neal (former Chief, Cultural Resource Preservation Services, NCR - retired) and Perry Wheelock (former Cultural Resource Manager, Rock Creek Park), provided major contributions and assistance in the overall vision of the treatment plan. This core group are listed as the authors of this document.

Over the years, the contributions of Rock Creek Park staff provided invaluable guidance and assistance. Special thanks to former Superintendent, Adrienne Applewhaite-Coleman and present Superintendent, Tara Morrison, who provided direction for the future management of the park. I especially want to thank the following individuals whose passion for protecting and restoring Farrand's wilderness landscape shaped the document in numerous ways including: Cindy Cox, former Deputy Superintendent; Nick Bartolomeo, Chief of Resource Management; Simone Monteleone, former Cultural Resource Program Manager; Don Kirk, Chief of Facility Management; Bill Yeaman, Natural Resource Specialist; Diana Bramble, Horticulturalist; Ana Chuquin, Vegetation Specialist; and Mike McMahon, Landscape Architect – Project Manager for the Implementation. Thanks also to Mark Frey, Exotic Plan Management Team Liaison, National Capital Region, for sharing his expertise for the plant classification for the detailed updated plant inventory located in the appendix.

The continuing support of our colleagues from the Trustees for Harvard University, Dumbarton Oaks Gardens, has led to collaborative projects to link the two properties visually and physically again. Special thanks to Gail Griffin, Director of Gardens and Grounds, serving as my "garden twin" for the upper gardens.

Profound thanks is also given to the Dumbarton Oaks Park Conservancy for partnering with the National Park Service to carry on the legacy of restoring the lands for the benefit of the Georgetown neighborhood and greater community. Their drive to seek other funding opportunities and implement aspects of this treatment, is truly rewarding.

Lastly, the final production was dependent on the talents of Tom Gwaltney, CR-GIS Specialist (Pathways Intern), who created the layout and final versions

for the Treatment Plan and Development Detail Plans. Without his dedication and attention to detail, this project could not have been completed.

I never anticipated this journey would take me and others over fifteen years to complete. As it was with Beatrix Farrand, her journey to create Dumbarton Oaks for the Blisses and then reimagine the park as a public space, started in 1921 and ending in 1951. After Farrand was hired by the Blisses to create this landscape, she wrote to Mildred Bliss in 1922

> *... what I shall try to do with the Oaks is simply be your gardening pair of hands, carrying out your ideas. As our minds run along the same lines it is going to be quite exciting to see when we think simultaneously the same ideas and I shall look for sharp criticism from you and shall equally tell you if your ideas do not seem to me likely to work well.*

Our wish is that we have continued to carry out the vision of Beatrix Farrand and Robert and Mildred Bliss.

Maureen DeLay Joseph
March 2015

Executive Summary

Preface to 2011 Update

This *Part 2: Design Development* of the Cultural Landscape Report (CLR) for Dumbarton Oaks Park (DOP) is an update of a Cultural Landscape Report that was originally prepared in 2003. NCR Regional Historical Landscape Architect Maureen Joseph completed the update with support from staff from Rock Creek Park and the National Capital Region. The formation of the Dumbarton Oaks Park Conversancy in 2011 as a recognized partner in the preservation and promotion of DOP has also guided the completion of Part 2 of the CLR.

This update builds on the *Part 1: Site History, Existing Conditions, and Analysis and Evaluation*, from 2000, and the findings prepared in the 2003 *Part 2* report in which the CLR team drew up a series of *Management Issues* and integrated them in the development of three *Treatment Alternatives*: 1) Stabilizing the Landscape; 2) Interpreting the Farrand Landscape; and 3) Reclaiming the Historic Landscape. The alternatives outlined a range of options: preservation of the park in its current condition; partial restoration; and full restoration of Beatrix Farrand's design.

Preliminary draft alternatives were presented to Rock Creek Park managers in September 1997 and to the Friends of Montrose and Dumbarton Oaks Parks in June 1998. Because all the alternatives required substantial commitments of time and money, the team recommended that each one incorporate a phased approach to implementation. Consequently, the alternatives were progressive in their degrees of recommended restoration. After reviewing the treatment options, the National Park Service (NPS) chose to fully restore Dumbarton Oaks Park because of its significance as a historic designed landscape. In making this decision, park managers realized the long-term commitment required for a complete restoration. They also acknowledged the need to make amends for lack of recognition of the property's historic significance. Although the preferred alternative is restoration, a limited amount of rehabilitation also will be undertaken to respond to current use, new regulations, changing environmental factors, and future maintenance criteria.

The CLR team subsequently expanded the preferred alternative by revising the general design guidelines and assessing the effect of restoration on each area of the park, including individual features and elements.

Because of the lapse of time between the development of the preferred alternative and the printing of this document, existing conditions have changed and reflect the implementation of some of the treatment actions presented in the 2003 version. In this 2011 revision, an updated existing conditions narrative is included in order for the NPS to refresh the Treatment Plan. There are also references to the latest federal sustainability guidance as directed by the *Secretary of the Interior's Standards on Rehabilitation & Illustrated Guidelines on Sustainability*

for Rehabilitating Historic Buildings (2011) and *Guidance on Sustainable Practices by Federal Agencies for Designed Landscapes* (2011). Lastly, this final version reflects NPS and community recognition of how the management issues affecting the park have progressed.

In the development of the *Treatment Alternatives* for DOP in 1997-1998, the CLR team mostly relied on the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. The guidance provided by accessibility, vegetation management, and sustainability laws and policies were not applicable when the alternatives were developed, but were taken into account in the development of the final treatment plan.

On April 12, 1941, the 27- acre valley garden of Dumbarton Oaks Park, opened as a public garden, a gift from Robert and Mildred Bliss. The Blisses vision carried forth by pioneer woman landscape architect Beatrix Farrand created their country estate in the city. In April 2011, Dumbarton Oaks Park Conservancy and National Park Service commemorated the 70th anniversary of the parks' opening as a public garden, a fitting reminder of the collaborative effort between two kindred spirits – Mildred Bliss and Beatrix Farrand. The valley garden they created continues to inspire all that enter. As so eloquently stated on a plaque the Blisses installed in 1933 overlooking the garden:

May kindly stars guard the dreams born beneath
the spreading branches of Dumbarton Oaks
Dedicated to the friendship of Beatrix Farrand
and to succeeding generations of seekers after Truth

(translated from Latin inscription)

Robert and Mildred Bliss
(Dumbarton Oaks Photo Archive)

Introduction

Management Summary

This *Cultural Landscape Report* for Dumbarton Oaks Park provides information and guidance for park managers and other preservation professionals for the future management of this significant designed landscape. *Part 1: Site History, Existing Conditions, and Analysis and Evaluation* was completed in 2000 and provides detailed information about the physical development of the landscape, a field analysis of the existing conditions, and evaluation of the significance and integrity of the landscape characteristics. This document, *Part 2: Design Development*, is the companion second volume that includes management issues, general recommendations, a treatment plan, and a record of the implementation. The initial preparation of *Part 2* was completed in 2003 with minor updates to the text and layout in 2005. From 2003-2011, the *Design Development*, Treatment Plan, although still a draft, guided Rock Creek Park management in the preservation and stabilization of significant landscape features and in the implementation of some restoration projects.

Project Scope, Organization, and Methods

Part 2 of the Cultural Landscape Report (CLR) contains several sections. Chapter 1 presents the *Management Philosophy*, which provides general considerations for the restoration and future management of Dumbarton Oaks Park (DOP), an existing conditions update for the seven *Landscape Character Areas* and classification of the *Management Zones* for each of the landscape character areas, which provide the framework for determining the level of allowable treatment. Chapter 2: *Treatment Alternatives* follows with the presentation of the three design alternatives that were originally developed and presented to NPS management and the public in 1997-1998. Chapter 3: *Treatment Plan* describes the *Management Issues and General Concept for the Treatment Plan*, which is divided into *Overall Site*, *Recommended Treatment Actions* and *Landscape Character Areas*, *Recommended Treatment Actions*. Finally, Chapter 4: *Record of Treatment* provides a place to keep an accurate account of the implemented treatment based on this Treatment Plan. An *Appendix* includes supplemental information for the implementation of the Treatment Plan including a consolidated plant survey, as well as meadow and reforestation management guidance.

This report has been developed according to the *Guide to Cultural Landscape Reports: Contents, Process and Techniques* (NPS, 1998). The *Dumbarton Oaks Park, Part 1* CLR was used extensively in the development of the treatment plan and was instrumental in formulating the treatment actions. During the preparation of Part 2, the project team gained a better understanding of the resources when project work was completed in the park. The structural stabilization work accomplished by the NPS Historic Preservation Training Center, and the pathway

and streambank work done by various youth organizations (the Student Conservation Association and AmeriCorps) uncovered original design details and construction techniques. Further analysis of historic photo documentation also provided new interpretation of the images. Probably the freshest insight was derived from various vegetative surveys conducted by the NPS and Dumbarton Oaks Park Conservancy.

Management Overview

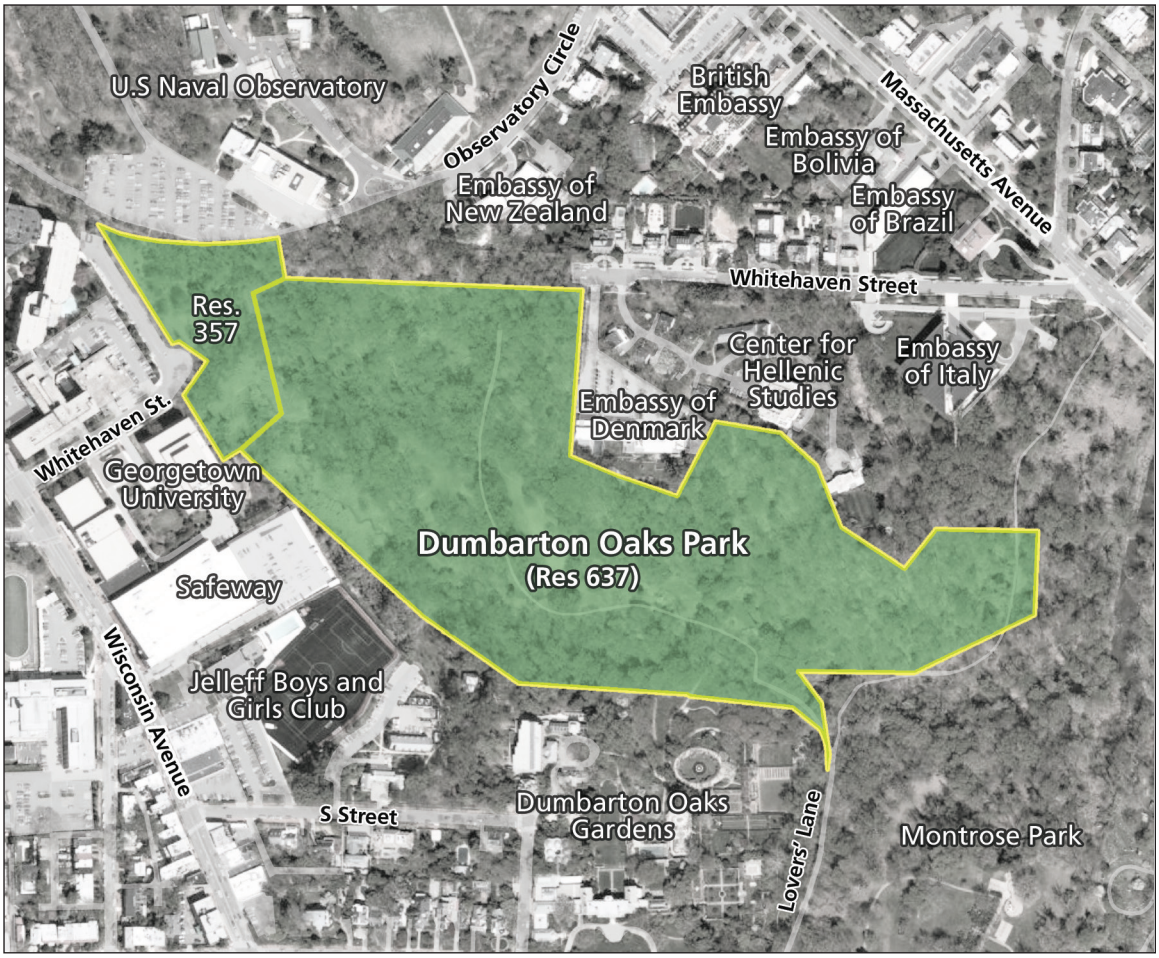
Since the selection of the preferred alternative, the National Park Service (NPS) actively involved the local community through labor and financial support on various projects to promote the preservation of the valley garden. The initial focus in 1998 centered on the Forsythia Hill area and then expanded to include trail repair and restoration of the stream path and streambank stabilization. Additional projects addressed structure stabilization and invasive vegetation management. The formation of the Dumbarton Oaks Park Conversancy in 2011 as a recognized partner in the preservation and promotion of DOP has also guided the direction for on-going projects.

With each year and subsequent storm event, awareness increases of the precarious status of DOP. The successful protection of Dumbarton Oaks Park depends upon the development of other plans and studies, specifically those that deal with hydrology and vegetation management. One such plan, the *Dumbarton Oaks Park–Phase I Hydrologic Survey* (August 1999), has been completed and was updated in 2011 by a hydrology intern with the Geological Society of America to reflect the current on-site conditions. The latest analysis and scholarship helped informed the development of this Treatment Plan.

Non-native, invasive plant management strategies are also progressing in targeted areas and against specific species in DOP. The NPS in conjunction with Dumbarton Oaks Park Conservancy updated the CLR *Part 1* plant inventory and created a consolidated plant list (see *Appendix*). Based on this information the NPS will revise the planting plans and all non-native plant material will be evaluated utilizing a National Capital Region non-native plant selection screening protocol. General guidelines and overall concepts for the control of non-native, invasive plants and restoration of the park's historic vegetative character are presented in the Treatment Plan.

Terminology

In the development of the *Dumbarton Oaks Park, Part 1* CLR, the CLR team found it necessary to employ a naming standard for several types of features within DOP including: general place names; paths; dams/waterfalls and pool; structures; and small-scale features. There are also descriptive terms commonly used by Beatrix Farrand employed in the document. To be consistent with the CLR *Part 1*, *Part 2* uses this same convention. Generally, when a place name



Location Map – Dumbarton Oaks Park, includes U.S. Government Reservations 637 and 357 (aerial imagery courtesy ESRI, Digital Globe – 2014).

or feature is capitalized, this indicates the name appeared on a historic map (James Berrall map of physical features in 1932 with revisions between 1933-1941) or was used in correspondence between Farrand and Mildred Bliss. For other place names or features which were not originally named, the CLR team found it necessary to assign standard names for ease of reference. These are not capitalized.

Also based on the CLR *Part 1*, there is an updated, consolidated plant list for the entire park and for each vegetation management area included in the Appendix. The plant species are categorized into four different groups. *Farrand* (F) – list plants in the original plant palette from the 1921-1951 period; *Farrand/ Existing Contributing* (F/C) – plants remaining from the original planting; *Existing Non-Contributing* (nc) – plant material present but not part of the original planting or not planted in that vegetation area; *Unknown* (unk) – plant materials present but not identified as contributing or non-contributing.

For the CLR *Part 2*, the project team applied the following terms to base plant category status for the approximately 240 plant species on the consolidated plant list.

Native – With respect to a particular ecosystem, a plant species that was not introduced to the area and which historically occurred or currently occurs in that ecosystem. The ecosystem varies in scale from a local area to a continent. For the purposes of this report the native ecosystem is defined as the Coastal Plain and Piedmont physiographic provinces within the Chesapeake Bay Watershed. In North America, the relevant time period is generally considered to be before European settlement.[1]

Non-native – A plant species not native to the region or area and introduced directly or indirectly (by humans).

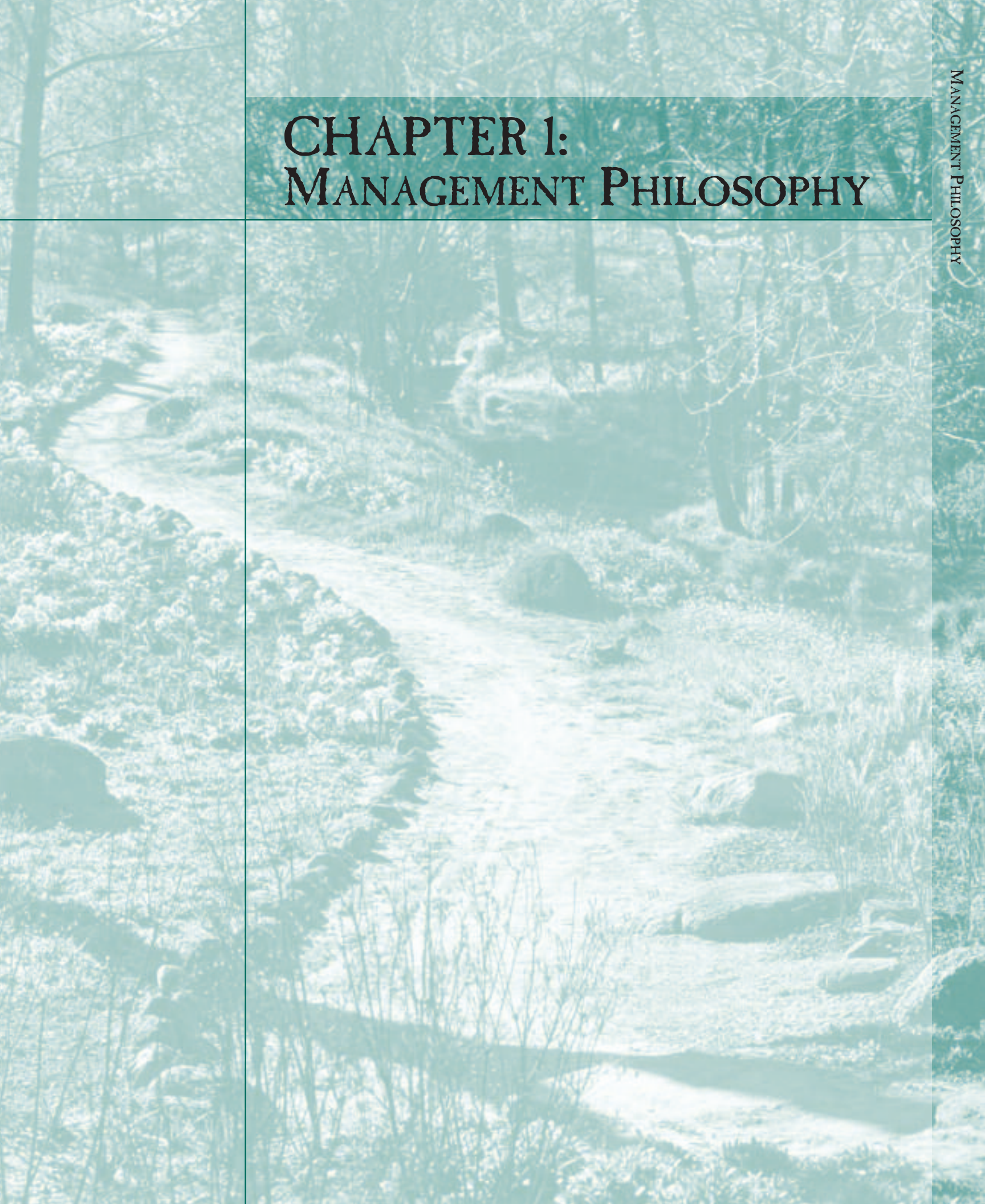
Non-native, invasive – A plant species not native to the region or area whose introduction (by humans) causes or is likely to cause harm to the economy or the environment.

Naturalize – A plant species not native to the region or area that is now reproducing and spreading in the wild without cultivation.

The plant category status is especially important because Farrand incorporated existing native vegetation into her design. She also chose to introduce non-native vegetation that possessed characteristics that harmonized with the landscape's informal design. Some of these non-native plants have become invasive and threaten or have destroyed the balance Farrand tried to create. While some exhibit "invasive" tendencies, others were intended to "naturalize" and spread beyond their original planted area. This design effect is most notable in her selection of non-native bulbs and native spring ephemeral plants which were planted in masses and intended to drift across the landscape

Endnotes

1 Slattery, Britt E., Kathryn Reshetiloff, and Susan M. Zwicker. 2003. *Native Plants for Wildlife Habitat and Conservation Landscaping: Chesapeake Bay Watershed*. U.S Fish & Wildlife Service, Chesapeake Bay Field Office, Annapolis, MD



CHAPTER 1:
MANAGEMENT PHILOSOPHY

Management Philosophy

Introduction

A landscape treatment plan provides guidelines for preserving and enhancing historic landscape characteristics and features while accommodating current park use. The plan describes desired future conditions of the landscape; however, it does not provide construction-level details necessary for implementation. The framework for treatment of Dumbarton Oaks Park is based on applicable policies, standards, and regulations to establish a preservation strategy for the stream valley.

Management Documents

National Park Service Regulations and Policies
As a unit of the national park system, treatment is guided by the mission of the National Park Service "...to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (Organic Act of 1916). The application of this mission for cultural landscapes is articulated in The *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Treatment of Cultural Landscapes*, which in turn are interpreted within the hierarchy of regulations and policies in National Park Service management. As a cultural resource, management of Dumbarton Oaks Park is defined by *36 CFR Part 2: Resource Protection, Public Use and Recreation (Preservation of Natural, Cultural and Archeological Resources)*. Cultural landscapes are further interpreted by the National Park Service Management Policies (2006) and *Director's Order #28* (Cultural Resources Management). These guidance documents serve as a foundation for stewardship of Dumbarton Oaks Park and provide specific policy related to vegetation management, response to climate change, and for public access. Please refer to the *Appendix – National Park Service Regulatory and Policy Documents* for specific requirements guiding the treatment of Dumbarton Oaks Park.

Accessibility Laws
The American with Disabilities Act (ADA–1990) and Architectural Barriers Act (ABA–1968) with Guidelines for Federal Outdoor Developed Areas (2013) ensure access to the built environment for people with disabilities. As a federal facility, the National Park Service must comply "to the extent practicable" and provide an accessible route for newly designed or altered portions of existing trails or pathways. To be in compliance with these applicable laws, regulations, and standards, an accessible route should be explored for Dumbarton Oaks Park. Please refer to the *Appendix – Accessibility Laws* for specific requirements and exceptions that may be allowed to protect cultural and natural resources.

Vegetation Management Guidance

Executive Order 13112 (1999) was issued to enhance federal coordination and respond to the complex and accelerating problem of invasive species. Specifically, it seeks to prevent the introduction of invasive species – plants, animals, and microorganisms – and provide for their control to minimize their impacts on the environment. An invasive species is defined as "a species not native to the region or area whose introduction (by humans) causes or is likely to cause harm to the economy or the environment, or harms animal and human health. ... The definition makes a clear distinction between non-native (or alien) species and invasive species. Most introduced species are not harmful."[1] Federal agencies are also directed to adopt a comprehensive approach to invasive species control. In 2000, the National Park Service created the Exotic Plant Management Program that now supports a National Capital Region Exotic Plant Management Team (EPMT). The EPMT collaborates with parks and volunteer groups for the successful management and restoration of disturbed areas impacted by non-native invasive plants.

Other vegetation management guidance is provided by *NPS Management Policies* (2006). The following items related to vegetation management build upon each other.

Use native plants:

The restoration of native plants and animals will be accomplished using organisms taken from populations as closely related genetically and ecologically as possible to park populations, preferably from similar habitats in adjacent or local areas.

4.4.1.2 Genetic Resource Management Principles

Management of non-native plants:

In rare situations, an exotic species may be introduced or maintained to meet specific, identified management needs when all feasible and prudent measures to minimize the risk of harm have been taken and it is ...needed to meet the desired condition of a historic resource, but only where it is noninvasive and is prevented from being invasive by such means as cultivating (for plants), or tethering, herding, or pasturing (for animals). In such cases, the exotic species used must be known to be historically significant, to have existed in the park during the park's period of historical significance, to be a contributing element to a cultural landscape, or to have been commonly used in the local area at that time.

4.4.4.1 Introduction or Maintenance of Exotic Species

Preservation of cultural landscapes:

The Park Service will provide for the long-term preservation of, public access to, and appreciation of the features, materials, and qualities contributing to the significance of cultural resources.

5.3.5 Treatment of Cultural Resources

Biotic value for cultural and natural resources:
The cultural resource and natural resource components of the park's resource stewardship strategy will jointly identify acceptable plans for the management and treatment of biotic cultural resources.

5.3.5.2.5 Biotic Cultural Resources

Based on the National Capital Region's non-native plant selection decision process, all non-native vegetation is evaluated for its impact on natural and cultural resource values to provide a framework for plant selection for cultural landscapes treatment. This process would be applied to Dumbarton Oaks Park and will guide plant selection in the development of planting plans during the implementation phase of the CLR.

Landscape Sustainability Guidance
Executive Order 13514 (2009), directs Federal agencies to implement sustainable practices in their operations. The directive states the need to increase energy efficiency; reduce greenhouse gas emissions; and conserve and protect water resources through efficiency, reuse, and stormwater management for all Federal facilities. To achieve these policy goals, *Guidance on Sustainable Practices by Federal Agencies for Designed Landscapes* (2011), provides strategies for landscape practices when constructing new or rehabilitating existing landscapes. The emphasis is on sustainable use of water, conservation of soils and vegetation, and support of natural ecosystem functions with specific guidance on "Existing Historic Facilities and Cultural Landscapes."[2] This document offers guidance on preserving the natural processes while respecting the historic resources of the cultural landscape, like Dumbarton Oaks Park.

Existing Conditions 2011

In *Part 1* of the *Dumbarton Oaks Park Cultural Landscape Report*, a description of the 1997-1999 existing conditions is presented as a descriptive narrative documenting the movement through the landscape. Since that time the NPS and community partners continued implementing stabilization measures to improve the conditions of Dumbarton Oaks Park (DOP). In order to refresh the *Treatment Plan*, the following narrative organized by *Landscape Character Areas*, includes a brief historic description, followed by the 2011 existing conditions to provide a revised point of reference for the development of the treatment plan.

Landscape Character Areas

During the landscape evaluation, seven landscape character areas were identified in Dumbarton Oaks Park: 1) Lovers' Lane; 2) the Lovers' Lane entrance and Beech Grove; 3) the southern slope; 4) the stream valley; 5) the designed woodland; 6) the meadows; and 7) the northern woodland. These areas were determined from analysis and comparison of the physical qualities of the landscape, the design intent as discerned in various historic documents, the integrity of the existing landscape features, and the relationships between the individual areas. In turn, the seven character areas define the landscape or spatial organization of Dumbarton Oaks Park. They also serve as the basis for structuring the treatment alternatives by area (Chapter 2). Of overarching concern, however, is the degree to which all of the character areas have suffered from the encroachment of non-native, invasive plant material.

1. Lovers' Lane

Lovers' Lane, originally a cobbled public road owned by the District of Columbia government and therefore not technically part of Dumbarton Oaks Park, was used primarily as a service road for the naturalistic garden in the stream

Figure 1.1 National Park Service entry sign at the top Lovers' Lane and R Street, NW, January 15, 1944. A temporary sign was placed over the entry sign during the winter months when Dumbarton Oaks Park was closed. (Rock Creek Park [ROCR] Photo Archive, #217a).

Figure 1.2 Lovers' Lane corridor includes a high stone retaining wall, narrow drainage channel, asphalt road and low dry-laid stone wall (National Capital Region [NCR], Cultural Landscapes Program [CLP] 2012).

Figure 1.3 (left) Narrow drainage channel along Lovers' Lane (NCR 2012).

Figure 1.4 (right) Low dry-laid stone wall on east side of Lovers' Lane and original cobble road surface partially covered by asphalt (NCR 2012).

valley. However, after the Blisses deeded the lower section to the federal government in 1940, Lovers' Lane became the primary entrance into DOP, because the connecting paths between the upper gardens and the park were either removed or closed for public use. The road led down the slope to the park from R Street, NW, between Dumbarton Oaks Gardens on the west and Montrose Park on the east.

2011 Update

Lovers' Lane was officially closed to motor vehicle traffic by the District of Columbia in 2005. The 25-foot-wide lane runs downhill north from R Street, NW, along the eastern boundary between Dumbarton Oaks Gardens and Montrose Park. On the western side of the lane, a high stone retaining wall runs along the eastern boundary of the gardens, topped by a chain link fence. At the base of this wall is a narrow storm drain channel, possibly designed by Beatrix Farrand, made of stone slabs interrupted by low stone rills. On the road's eastern side is a

Figure 1.5 Dumbarton Oaks Park replica entrance sign at top of Lovers' Lane and R Street, NW (NCR 2012).

low, dry-laid stone wall in poor condition from the former Montrose Estate, now Montrose Park. A newly laid layer of asphalt now covers most of the lane's cobbled surface elevating the road surface one to two feet above the stone channel, exacerbating the runoff into the channel. Trees and shrubs line the route, with the trees forming a canopy overhead. Vegetative debris accumulates seasonally in the drainage channel and along the eastern border. At the foot of the hill to the west of the lane is the entrance to Dumbarton Oaks Park. The NPS has jurisdiction over the roadway and drainage channel along the west side, to the base of Dumbarton Oaks Garden's retaining wall.

Most visitors enter the site by going down Lovers' Lane from R Street, NW, where they pass around a metal NPS gate located at the top of the lane (Figure 1.5). Others follow social trails worn down the slopes through Montrose Park. Based on recommendations from the CLR team, replicas of the 1940s DOP entrance signs were reproduced by the Friends of Montrose and Dumbarton Oaks Parks in 1999 and installed at the top of Lovers' Lane at R Street, NW, and at the Lovers' Lane entrance gate to the park.

2. Lovers' Lane Entrance and Beech Grove

The main entrance to the DOP once it became a public park, the path follows the route of an old farm road through the Lovers' Lane entrance gate designed by Farrand to a stone bridge over the unnamed creek. In Farrand's design,

Figure 1.6 Park visitors departing Dumbarton Oaks Park via the Lovers' Lane gate, during the prime spring season, April 1, 1945. By 1945 the National Park Service installed this entrance sign (ROCR Photo Archive, #437-A6).

Figure 1.7 Open gates at Lovers' Lane and Beech Grove entrance (NCR 2012).

an existing grove of American beech trees provided shade to the entry path, flanked by a stone retaining wall on the southern uphill side. Farrand augmented the natural grove of beeches with an understory of mountain laurel. The beech trees formed a tunnel-like enclosure over the path, and the undulating massing of mountain laurel helped define the path edge, marked by spring bulbs and native perennials. The play of light and shade through the trees and the formal quality of the progression of smooth gray trunks gave this entryway its distinctive character.

2011 Update

At the foot of Lovers' Lane is a replacement wooden gate hung between Farrand's stone piers. The main path leads through this gate and into the Beech Grove, the first section of the route through Dumbarton Oaks Park. Regulatory signs, informational boxes, and another 1940s replica entrance sign are located by the entrance gate on the downhill side of the path. A grove of American beech trees line the northern edge of a wide dirt path, which formerly followed a narrower, more curving course of an old farm road. Along the southern edge, on the uphill side is a retaining wall of large rounded stones, built during the Farrand era. The wall is starting to show degradation from off-site runoff eroding the slope and from the tree roots dislodging stones. The decline of the mountain laurel and subsequent invasion of non-native, invasive plants diminishes the character of this area. English ivy,

Figure 1.8 Replacement wooden gate used original strap hinges and lock (NCR 2012).

Figure 1.9 Pathway leading from the entrance gate through Beech Grove. Invasive vines drape over the retaining wall define the uphill slope, but the lack of understory on the downhill side, makes the pathway edge ill-defined (NCR 2012).

Norway maple, and shrub honeysuckle dominate the understory, which impacts the natural regeneration of the beech grove, which is presently in decline, and limits the number of spring-flowering bulbs and perennials remaining from Farrand's design. As visitors progress north on this broad path, they catch glimpses of a stone bridge, most likely designed by Farrand; the first of a series of waterfalls, East Bridge Falls; and the Old Stone Pump House on the north side of the stream. Just east of the stone bridge, a side path descends down some deteriorated railroad tie steps to a stone platform constructed sometime after 1964, beside the East Bridge Falls. The main path continues to the stone bridge where visitors can choose one of two routes: the stream path, which leads west, and the farm track, which heads northwest over the bridge.

3. Southern Slope

Farrand treated this hillside, which extends down from Dumbarton Oaks Gardens to the stream valley, as a transitional area between the upper and lower gardens. During the Blisses' ownership, four paths ran down the hillside connecting the upper gardens with the naturalistic garden. The paths provided a mixture of panoramic views and narrow, more defined vistas. Farrand even built new structures, such as the Forsythia Arch and the Forsythia Steps to formalize the connections. When the property was divided in 1940 and a chain-link boundary fence was installed, the four connecting paths no longer functioned as designed, and two of them, the iris path and stepping-stone path, were eventually abandoned. This area was one of the most intricately planted and diverse sections of the park, where certain features, including lines of trees and an open area, extended across what would become the boundary between the two properties. Farrand created a variety of groves, shrub massing, and clearings

on the slope. She augmented existing mature stands of tulip poplars and beech trees with groupings of mountain laurels on the slope south above the Laurel Pool and further west of the Hazel Walk, with a dense rhododendron plantation. The southern slope extended into the western reaches of the park, where Farrand allowed woods to grow.

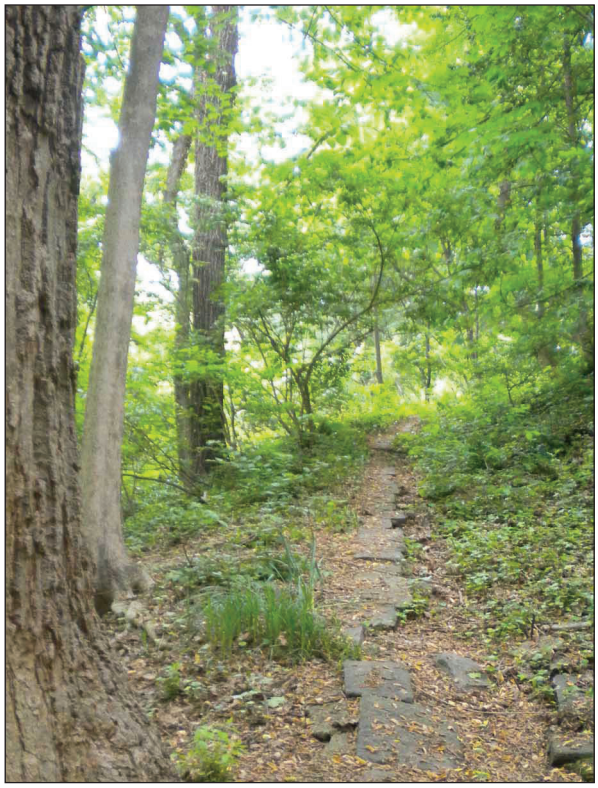


Figure 1.10 Remnant stones of the Hazel Walk, leading up the hill (NCR 2012).

2011 Update

As of 2011, the shrub massings for the southern slope either are missing altogether or are in various stages of decline. The southern slope continues to serve as the foreground for views of Dumbarton Oaks Garden from the stream valley and into the meadows on the north. The westernmost woods are comprised of rampant vine and invasive shrub growth that no longer screens the intrusive development along adjacent portions of Wisconsin Avenue, NW, and other adjoining streets as Farrand intended. In other areas of the slope, the shrub massing either are missing and replaced by non-native, invasive woody and vine growth or are overgrown and no longer exhibit their original form (rhododendron).

Of the original four paths that once ran down the slope connecting the two sections, only the Forsythia Steps still functions as originally intended. Forsythia Hill was one of the first major projects for DOP following the recommenda-

Figure 1.11 Rampant vine and invasive shrub growth along upper southern slope abutting the backside development along Wisconsin Avenue (NCR 2013).

Figure 1.12 Forsythia Hill as seen the first spring it was open to the public as Dumbarton Oaks Park, April 12, 1941 (Photo by Ranny Routt. Washington Star Collection. Copyright Washington Post: Reprinted by permission of the D.C. Public Library).

Figure 1.13 View of Forsythia Hill after successful restoration of key design elements - archway, gate and forsythia shrub massing (NCR 2005).

tions made in the Landscape Preservation Maintenance Plan and reinforced by the draft CLR Part 2: to restore the forsythia massing, stabilized the steps, unseal the archway, and replace the gate. The National Park Service first removed the non-native, invasive vegetation from the slope and replanted the area with forsythia shrubs propagated by cuttings taken from the original plant stock in the upper gardens. These new plants reestablished the signature forsythia plantation, which spilled from the upper gardens down Forsythia Hill into the valley garden. In 2000, stabilization funds supported the repointing and resetting of the Forsythia Steps. At the same time Dumbarton Oaks Garden, unsealed the archway between the two gardens and installed a re-fabricated iron gate, which made it possible to walk between the garden and park once more. Currently the gate is only opened on special occasions, but visitors can look through the gate to appreciate the continuation of the stairway.

4. Stream Valley

In Farrand's design, the stream valley was the primary character area of the DOP design where a small tributary of Rock Creek flows through the wooded valley between hillsides on the north and south, the latter abutting Dumbarton Oaks Gardens. Along this stream, Farrand constructed a serpentine footpath, the beginning of her circular walk through the park. The path, bordered by rounded stones, leads through a series of distinctive spaces that are defined

Figure 1.14 Serpentine character of lower stream path, c. 1935 (Dumbarton Oaks Studies in Landscape Architecture [DOSLA] Photo Archive #13.29).

Figure 1.15 View from Clapper Bridge Falls to upper stream valley waterfalls and north stream path, c. 1935 (DOSLA, Photo Archive, #13.13).

Figure 1.16 South Stream Path revealed stones (NCR 2005).

by plantings of trees, shrubs, and perennials. A second path ran for a shorter distance along the northern side of the stream. In the stream channel, Farrand constructed a series of stone dams, over which the water flows, forming 18 waterfalls and three pools. Various rustic structures, including stone benches and additional water features, were the focal points of the enclosed spaces or "garden rooms" along the stream path. The main route paralleled the southern side of the stream until it crossed the stream over Clapper Bridge Falls, where it ran along its north bank for a short distance. The path turned in a northwesterly direction, following the edge of meadow #5, before it entered the designed woodland. There were two more groupings of dams and a small island in the stream above Clapper Bridge. The planting scheme in this area of the upper stream valley changed from predominantly herbaceous groupings to shrub massings interspersed with herbaceous plants. The designed woodland, in turn, consisted of dense overhead tree canopy and thick understory.

2011 Update

Several student groups, directed by NPS staff, uncovered the original rounded edging stones and resurfaced the south stream path to the Laurel Pool area. Large oak logs were salvaged from downed trees in Rock Creek Park and repurposed as timber bridges to restore two of the three crossing points at the Gray arbor memorial and Clapper Bridge Falls, to connect to the north stream path and memorial structure. Student groups also cleared and edged the north stream path and portions of the upper stream path using existing marker stones and historic photos to guide the work.

Figure 1.17 Rustic oak logs were salvaged from downed trees in Rock Creek Park to reestablish the log bridge crossing at Clapper Bridge Falls (NCR 2005).

Figure 1.18 The pebble stream channel diverted storm water from the work yard down to the stream, while a natural spring emerged from the Spring Grotto and ran down the cedar rills to a cistern, c. 1935 (DOSLA Photo Archive, #13.21).

Figure 1.19 Temporary pipe routes the storm water further down the slope to a lower panel. The Spring Grotto no longer has an active spring running, so the cedar rills were removed (NCR 2005).

In 2000, various elements within the Spring Grotto area were stabilized. Runoff from the garden's greenhouse work yard directed to a storm drain and emptied onto the pebble stream. Over the years portions of the concrete pebble stream collapsed, undermined by the off-site runoff. In an attempt to limit further deterioration, a temporary pipe routes the storm drain water further down the slope. This temporary fix is causing further damage to the lower concrete panel. As part of the south stream path, the National Park Service constructed a footbridge over the pebble stream and grotto cedar rills that captured the spring water from the Spring Grotto to provide a temporary safe crossing over the features. Recent changes in the geohydrology, possibly due to off-site construction activities, may have caused the natural spring grotto to stop flowing. The cedar rills were removed to protect them from further deterioration since the water no longer runs over them.

Figure 1.20 The pedestrian bridge provides a safe crossing over the features in the Spring Grotto area (NCR 2012).

NPS projects were also focused on controlling stream bank erosion. Initial stabilization measures utilized sand bags positioned in erosion-prone areas near the waterfall wingwalls. This method was modified in subsequent attempts to counter the swift currents and increasing volume of water in the channel by using burlap bags filled with dry cement mix. Over the years the burlap fabric has disintegrated, leaving a concrete stacked wall. The waterfalls beyond Clapper Bridge Falls are hard to discern due to dense vegetative growth and the redirection of the stream channel.

The stone elements for the four structures still remain and are more resilient in the moist environment. The wooden supports for the Gray and Stream arbors, and Old Pump House, deteriorated long ago. Since 1999, the Old Stone Pump House cedar shake roof has been replaced several times and the other structural features have only received minor repointing.

The design that Farrand devised for the valley is still evident, although there still is extensive deterioration even after implementing the numerous trail and stream stabilization projects. The pools continue to silt up, the streambanks continue to erode, the stream channel has shifted, and many of the original plantings have disappeared. Efforts to reestablish the original upper and north stream paths have been hampered as well by excessive run-off. Most of the trails, dams, and structures have suffered serious damage from years of heavy stormwater overflow.

Figure 1.21 The north stream path alignment acts as a drainage channel for runoff from the farm track and meadow #5 (NCR 2005).

Figure 1.22 The upper stream path alignment has shifted over the years and does not visually feel connected to the waterfalls and stream (NCR 2012).

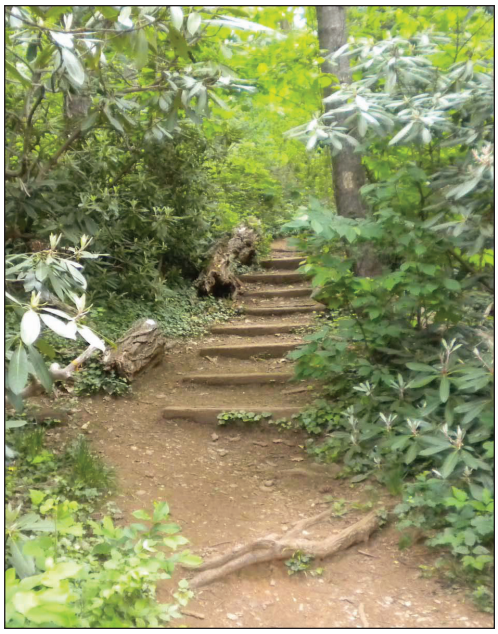


Figure 1.23 (left) This is the only historic picture depicting the character of the woodland paths (MRCE 1961).

Figure 1.24 (right) Southernmost woodland path is the only woodland path still used (NCR 2012).

Figure 1.25 Non-historic path alignment continues up the slope to the Whitehaven Street, NW western branch entrance (NCR 2012).

5. Designed Woodland

After leaving the stream valley, the path enters a woodland of deciduous trees which Farrand designed as the final section of the journey through Dumbarton Oaks. She planted shrubs interspersed with a massing of perennials along the path to provide a sense of enclosure. Three ten-foot-wide grassed paths led north up a slope through the woodland before turning east and opening out to the western most meadow.

2011 Update

Only the southernmost woodland path remains, where it leads from the stream path through the woodland and back to meadow #5 on the east. A series of two runs of stone steps still remain in the woods, representing the westernmost path that was abandoned at some point. A non-historic NPS trail enters DOP from the west, beginning at the western branch of Whitehaven Street, NW, and connecting to the southernmost woodland path. After the park gates were

opened year-round, the National Park Service allowed this informal entrance into the park to remain and integrated it into the official park trail system. Over the years numerous social trails have replaced the other original grass paths. Non-native, invasive vines have compromised the health of the woodland where they have infiltrated the understory and infested some of the canopy trees, especially on the edges. Non-native, invasive shrubs are also prevalent in the understory. Even with the impacts caused by the non-native, invasive plants, most of the tree canopy is in good condition.

Severe erosion is evident in the upper, northeast portion of the woodland, where stormwater discharges from a pipe onto a steep slope, and where surface runoff from adjoining properties flows into the DOP.

6. Meadows

Across the northern hillside of the stream valley, in an area historically known as Clifton Hill, Farrand created five meadows from an old open pasture area. Lines of trees separate the individual meadows, which increase in area from east to west. An old farm track, which predated the design, ran along the foot of the hill. The return journey of the circular walk led east through the meadows and along the brow of Clifton Hill, just below the border of the northern woodland. Farrand suggested adding this path after the NPS acquired the property. In the meadows, the pasture grasses were enhanced by drifts of perennials and bulbs, creating swaths of spring color across the face of the hill. Meadow #5 was the only one to historically lack a defined path in its top section. The three grass

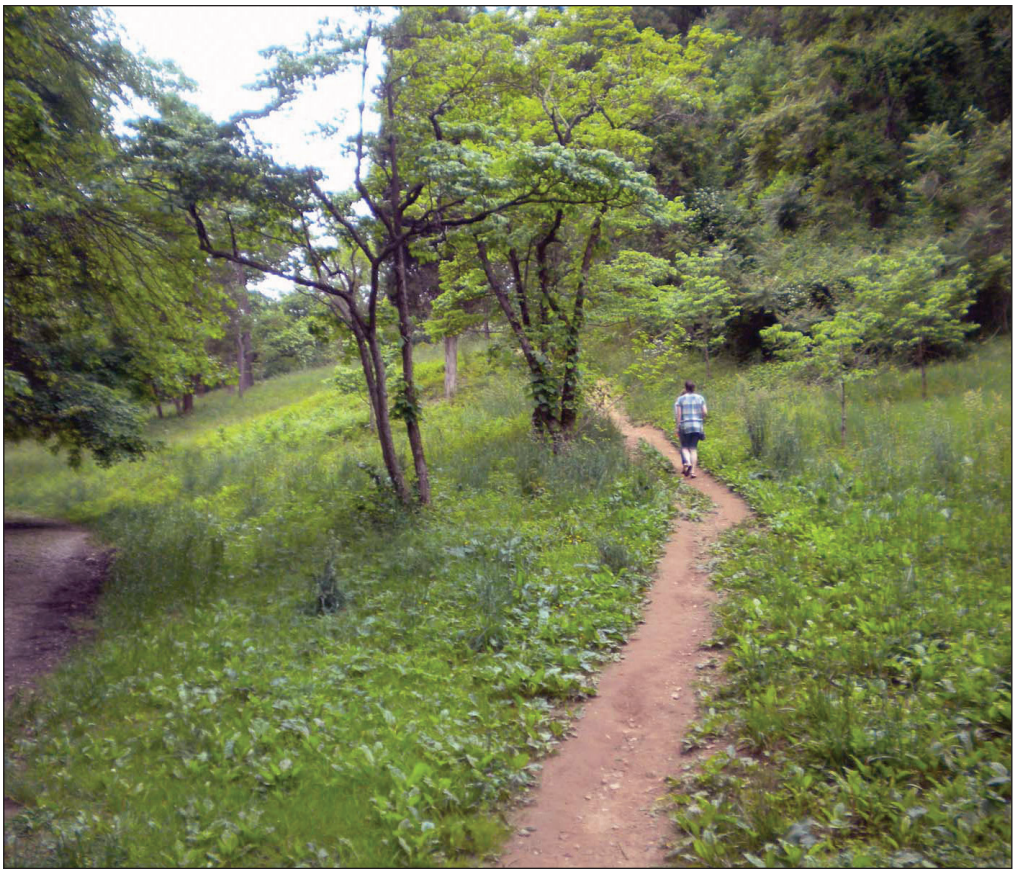


Figure 1.26 A social trail has developed down through a portion of meadow #2 (NCR 2012).

paths of the designed woodland spilled out into this meadow, offering visitors a choice between the Clifton Hill Walk or the farm track route.

2011 Update

Over the years, the open meadow areas continue to shrink, as the edges are encroached by non-native, invasive and native woody vegetative growth, reducing each meadow's original size. The lines of trees separating the five meadows expanded into large clumps of woody growth, not easily discernable as individual specimen trees separating the spaces. This unchecked vegetation also contributes to the displacement of the historic alignment of the Clifton Hill Walk. Most of the trails and farm track suffer from severe erosion due to on-site runoff deteriorating the trail surface. A recent effort by the NPS and partner groups have removed some of the encroaching vegetation from the edges and lines of trees to redefine the historic configuration of the first four meadows.

7. Northern Woodland

In the original design, the northern woodland consisted of a dense border of trees growing along the top of the Clifton Hill slope. Farrand allowed this natural woodland to develop as a backdrop for the park and the upper gardens. Small trees and shrubs, such as dogwood and Scotch broom, formed a transitional border between the woodland and meadows. A chain-link fence was installed in 1940 along this northernmost boundary of Dumbarton Oaks Park.

2011 Update

This mostly deciduous woodland is still in relatively good condition where some of the oldest stands of oak, hemlock and poplar trees provide the woodland perimeter that Farrand envisioned. Certain areas within this woodland have been invaded by Norway maple trees and various non-native invasive vines such

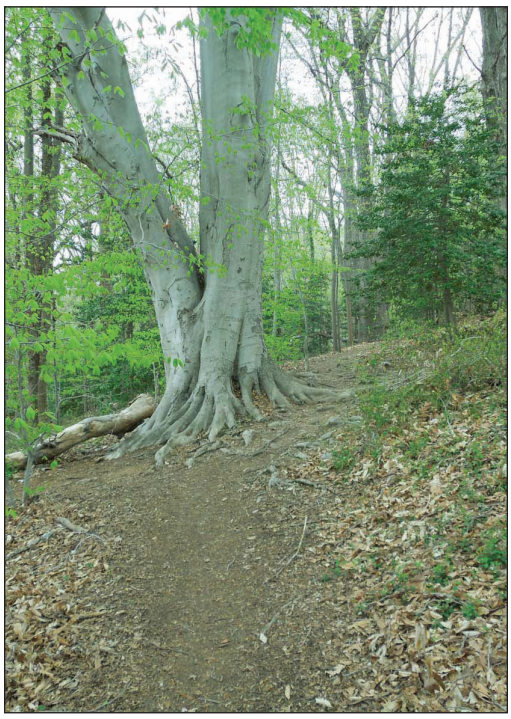
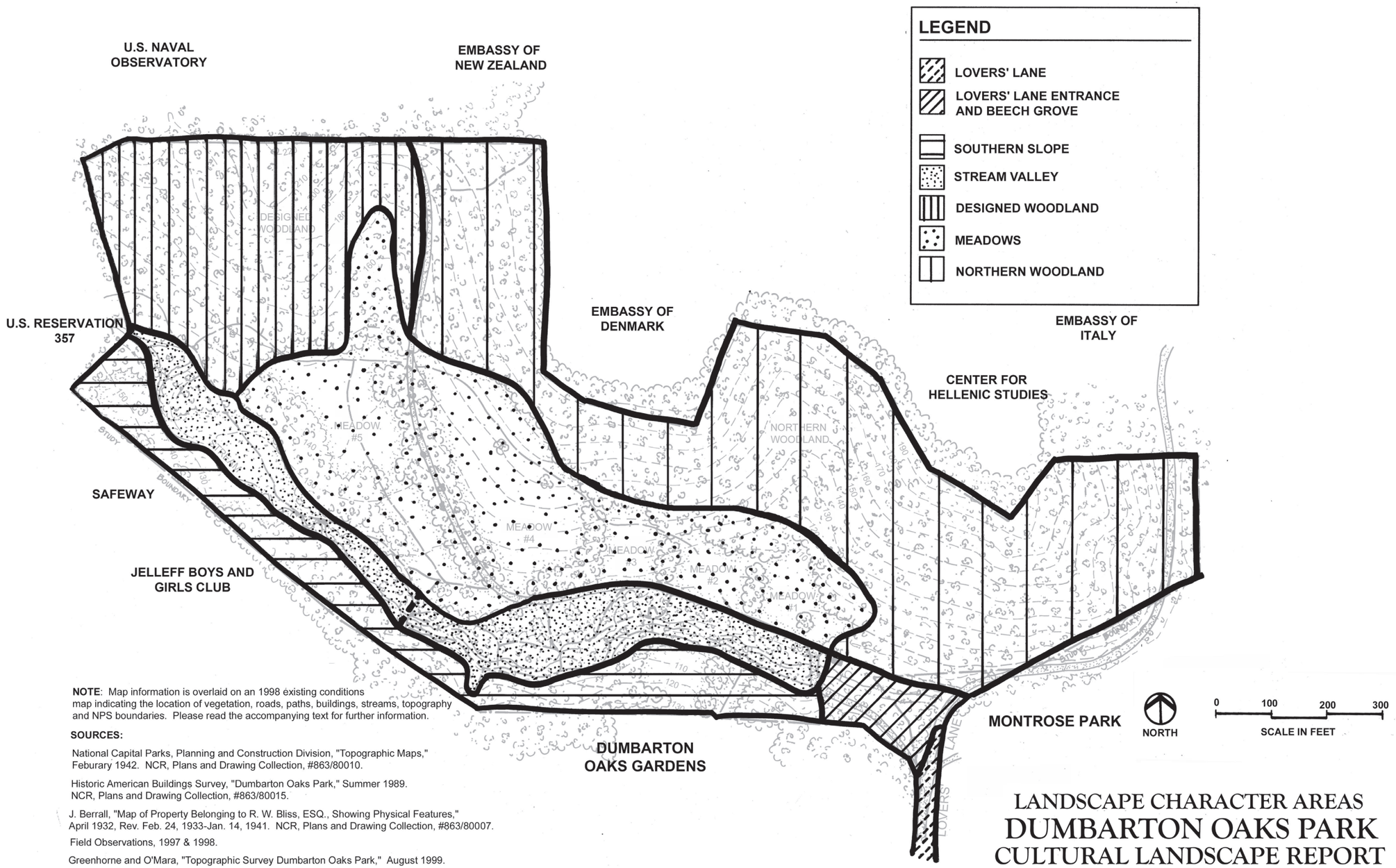


Figure 1.27 (left) Although invasive vegetation has affected the condition of the northern woodland, mature native vegetation like this American beech tree, are still prevalent (NCR 2013).

Figure 1.28 (right) Unofficial entrance from Whitehaven Street, NW, eastern branch (NCR 2013).

as Chinese wisteria and oriental bittersweet. The woodland edge has deteriorated somewhat and is now largely composed of tree-of-heaven and other non-native, invasive herbaceous plants. Over the years, the boundary fence has been breached where trees have fallen or people have pulled it down. As a result, social trails have developed through the breached areas. A heavily used trail has developed along the northern boundary from the east branch of Whitehaven Street, NW, where the fence no longer serves as barrier and connects to the end of the farm track. Another social trail follows the boundary fence along the Embassy of Denmark property line, and spur trails connect with the Clifton Hill path.



NOTE: Map information is overlaid on an 1998 existing conditions map indicating the location of vegetation, roads, paths, buildings, streams, topography and NPS boundaries. Please read the accompanying text for further information.

SOURCES:

National Capital Parks, Planning and Construction Division, "Topographic Maps," Feburary 1942. NCR, Plans and Drawing Collection, #863/80010.

Historic American Buildings Survey, "Dumbarton Oaks Park," Summer 1989. NCR, Plans and Drawing Collection, #863/80015.

J. Berrall, "Map of Property Belonging to R. W. Bliss, ESQ., Showing Physical Features," April 1932, Rev. Feb. 24, 1933-Jan. 14, 1941. NCR, Plans and Drawing Collection, #863/80007.

Field Observations, 1997 & 1998.

Greenhorne and O'Mara, "Topographic Survey Dumbarton Oaks Park," August 1999.

LANDSCAPE CHARACTER AREAS

DUMBARTON OAKS PARK
CULTURAL LANDSCAPE REPORT

PREPARED BY: M. JOSEPH DATE: JULY 1997

REVISED: AUGUST 2011

Map 1.1 Landscape Character Areas (CLP, July 1997).

Treatment Approach

The Secretary of the Interior provides professional standards and guidance for treatments to cultural landscapes listed in or eligible for the National Register of Historic Places. Dumbarton Oaks Park was initially listed in 1967 by name only on the National Register without the supporting documentation, but in 2004 the National Park Service provided supporting documentation for this nationally significant designed landscape. The period of significance for nomination, 1921-1951, applicable National Register criteria B (property associated with the lives of persons significant in our past – Robert and Mildred Bliss), and criteria C (property embodies the distinctive and characteristics of a type, period... or possesses high artistic values... - Beatrix Farrand – Landscape Designer), reflects the findings of the CLR Part 1. This means that the Secretary of the Interior's treatment standards are required to be applied to any treatment action for Dumbarton Oaks Park. There are four approaches to treatment for cultural landscapes including preservation, rehabilitation, restoration, and reconstruction. Each of these approaches is described herein as articulated in the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*:

Preservation
When the property's distinctive materials, features, and spaces are essentially intact and thus convey the historic preservation without extensive repair or replacement; when depiction at a particular period of time is not appropriate; and when a continuing or new use does not require additions or extensive alterations, preservation may be considered as a treatment.

Preservation includes applying measures to sustain the existing form, integrity, and materials of the contributing features of a historic property. This approach focuses upon stabilizing and protecting extant historic resources, rather than replacing missing elements.

Rehabilitation
When repair and replacement of deteriorated features are necessary; when alterations or additions to the property are planned for a new or continued use; and when its depiction at a particular period of time is not appropriate, rehabilitation may be considered as a treatment.

The act or process of rehabilitation allows repairs and alterations, and additions necessary to enable a compatible use for a property, as long as the portions or features which convey the historical, cultural, or architectural values are preserved.

Restoration
When the property's design, architectural, or historical significance during a particular period of time outweighs the potential loss of extant materials, features, spaces, and finishes that characterize other historical periods; when there is substantial phys-

ical and documentary evidence for the work; and when contemporary alternations and additions are not planned, Restoration may be considered as a treatment.

Restoration is the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time. This includes reconstruction of missing features from the restoration period, and removal of features form all other periods. The approach can be considered only when the property's significance during a particular period of time outweighs the loss of extant elements from other historical periods.

Reconstruction

When it is necessary to re-create an entire non-surviving landscape with new material; when its depiction at a most significant period of time outweighs the potential loss of extant materials, features, spaces, and finishes that characterize other historical periods; there is far less (if any) extant historic materials prior to treatment, Reconstruction may be considered as a treatment.

Reconstruction is the act or process of using new construction to depict a non-surviving site, landscape, building, structure, or object as it appeared at a specific period of time in its historic location. The approach is appropriate only when the property's significance during a particular period of time outweighs the potential loss of extant features that characterize other historical periods. In addition, there must be substantial physical and documentary evidence for the work, and the work must be clearly identified as a contemporary re-creation. Reconstruction of an entire landscape is always a last resort measure for addressing a management objective and can only be undertaken with specific written approval from the Director of the National Park Service after policy review.

Management Zones

Cultural landscape character areas with similar types of significance and integrity have been grouped together to create four management zones. The management zones provide the framework for determining the level of allowable treatment. For instance, if a historic designed landscape has a high degree of integrity (limited or no changes to the original design), the treatment alternative will be preservation. If a historic designed landscape has low integrity (major changes or loss of features), the treatment alternative can range from preservation, to restoration or rehabilitation. However, when significant amounts of the original fabric or character are lost, rehabilitation may be more appropriate.

In the case of Dumbarton Oaks Park, the entire site is significant, but the severity of change from the original design, or the degree of integrity, varies across the site. As a result, each zone in Dumbarton Oaks Park requires different levels of treatment and management for the preservation of its significant cultural landscape resources. The zones have been organized according to levels of significance and integrity. Each cultural landscape character area is included in one of the management zones.

ZONE I Areas with a high degree of significance and a high degree of landscape integrity relating to the historic period, with few disturbances. The design intent is fully intact. The acceptable landscape treatment would be preservation, where protection, maintenance, and repair are emphasized.

-Northern Woodland

ZONE II Areas with high significance and medium landscape integrity relating to the historic period, with more site disturbances. The design intent is evident, but there have been minor changes to the spatial organization. The acceptable landscape treatment would be preservation and /or restoration.

-Meadows

ZONE III Areas with high significance and medium landscape integrity relating to the historic period, due to loss or replacement of some original material. The design intent is evident, but there have been major changes to some of the landscape characteristics. The acceptable landscape treatment would be preservation, restoration, and /or rehabilitation.

-Lovers' Lane
-Lovers' Lane Entrance and Beech Grove
-Stream Valley (upper and lower)

ZONE IV Areas with high significance and low landscape integrity relating to the historic period, due to the loss of significant landscape characteristics. The design intent is no longer evident because of major changes to the landscape characteristics. The acceptable landscape treatment would be preservation, restoration, and /or rehabilitation. There is also the option to make alterations and additions for contemporary use.

-Southern Slope
-Designed Woodland

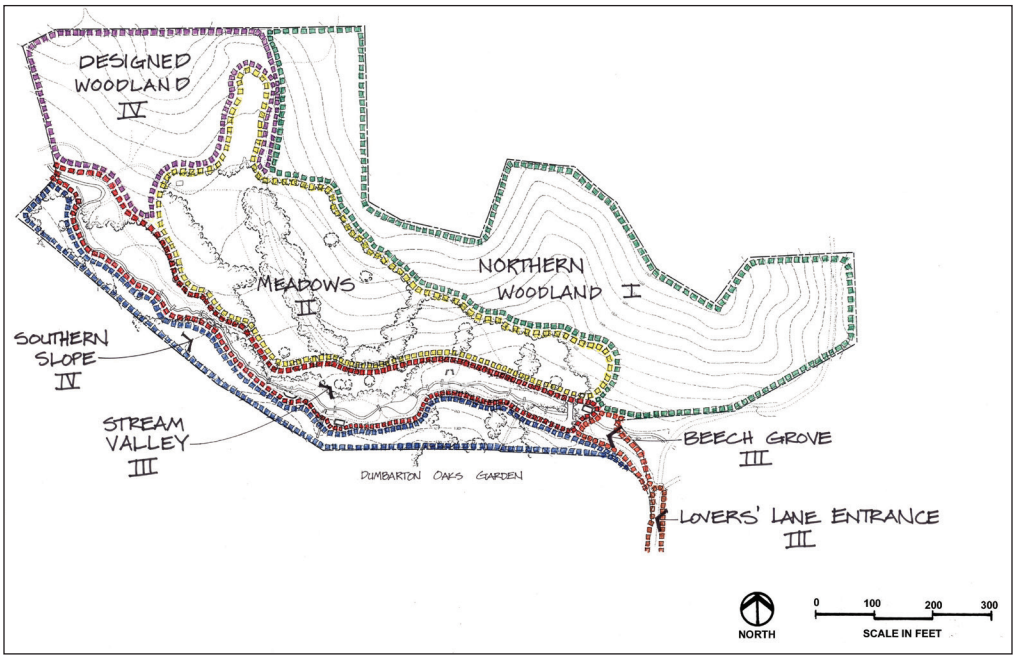


Figure 1.29 Management Zones (CLP 1997).

Endnotes

1 Excerpt from the National Invasive Species Council's 2005 Five-Year Review of Executive Order 13112 on Invasive Species.

2 The guidance document's best practices and performance goals for maintaining a sustainable landscape were drawn from federal agency subject matter experts and from the Sustainable Sites Initiative 2009; The Sustainable Sites Initiative: Guidelines and Performance Benchmarks 2009 (available at http://www.sustainablesites.org/report); and The Case for Sustainable Landscapes (available at http://www.sustainablesites.org/report).

CHAPTER 2:
TREATMENT ALTERNATIVES

Treatment Alternatives

These three treatment alternatives were presented to National Park Service staff in September 1997 and to the Friends of Montrose and Dumbarton Oaks and public in June 1998. Because all the alternatives required substantial commitments of time and money, the team recommended that each one incorporate a phased approach to implementation. Consequently, the alternatives are progressive in their degrees of recommended restoration. **There was a conscious decision not to update this chapter to 2011 conditions; instead the alternatives are presented in their entirety, to reflect the original thinking of the project team**. The only addition to this chapter is noting where tasks have been "completed" since these alternatives were developed in 1997-1998, or are "pending," to be implemented by 2016.

Alternative 1: *Preservation*: Stabilizing the Landscape

General Concept:

The site would be stabilized at its current level of integrity with the same form and materials that exist today. Open and enclosed areas would be maintained, preserving the existing relationship between woodlands and meadows. The stream and related structures would be stabilized, and the streambanks would be protected from further erosion. All other structures would be stabilized and extant historic vegetation would be preserved. Even this, the simplest treatment alternative, would involve a high level of maintenance, particularly the control of non-native, invasive vegetation in each management zone.

Elements of the Plan:

Lovers' Lane

To help direct visitors to Dumbarton Oaks Park, an entrance sign would be installed at the east side of the intersection of Lovers' Lane and R Street. (The original entrance sign stood on NPS property on the southwestern corner of Montrose Park.) Overgrown vegetation would be cut back to reveal the stone gutter and walls flanking the Lovers' Lane corridor. These structural features would then be stabilized.

Completed Tasks:

- Replicated and installed entrance sign
- Stabilized structural features - stone gutter and Dumbarton Oaks Garden wall

Lovers' Lane Entrance and Beech Grove

At the bottom of Lovers' Lane, another entrance sign would be installed on

the original extant post to direct visitors to Dumbarton Oaks Park through the main gate. The historic vegetative character (beeches, herbaceous plants) would be preserved and any non-native, invasive vegetation would be removed. All structural features – the stone piers, wooden gates, hardware, and stone wall – would be stabilized.

Completed Tasks:

- Replicated and installed entrance sign
- Removed non-native, invasive vegetation
- Stabilized structural features – stone piers and hardware

Southern Slope

To maintain a visual connection with the upper gardens, the Forsythia Steps and the Hazel Walk would be stabilized and kept clear of vegetation. The open character of the area between the two paths would be maintained. The historic vegetative character along the southern slope would be maintained, while non-native, invasive vegetation would be removed to maintain the existing views and the relationship between the open and wooded areas. Historically wooded areas, where substantial removal of invasive vegetation is necessary, would be reforested as defined by current National Park Service criteria for native woodland. The ongoing work of restoring the vegetation on forsythia hill would continue according to the guidelines in the Landscape Preservation Maintenance Plan. All structural features, including the Forsythia Arch, spring grotto and pebble stream, and boundary fence, would be stabilized and maintained.

Completed Tasks:

- Stabilized Forsythia Steps
- Cleared vegetation off Forsythia Steps
- Removed non-native, invasive vegetation from the slope
- Replanted forsythia hill with original forsythia root stock
- Stabilized structural features – Forsythia Arch, spring grotto and pebble stream

Stream Valley

Due to safety concerns, the path surface would be improved in its current location, with some provisions for safe passage at the historic stream crossings and over the pebble stream path. The designs for these provisions would not diminish the historic integrity of the path. The dams, streambanks, and retaining walls would be stabilized, but not restored, by following the guidelines in the *Landscape Preservation Maintenance Plan*. The historic vegetative character would be maintained, while the non-native, invasive vegetation would be removed to stabilize the current relationships between open and enclosed areas and to keep clear views up into the meadows and upper gardens. The last two components

of the stream valley design, the landscape structures (including the Old Stone Pump House, the stone bridge, the Gray arbor memorial, the Old Pump House, and the Stream Arbor) and small-scale features (including the millstone, the waterwheel, the marker and edging stones, the birdbath, and the wooden benches), would be stabilized to prevent further deterioration.

Completed Tasks:

- Stabilized path surface
- Stabilized streambanks
- Stabilized structural features – Old Stone Pump House, Gray arbor memorial, Old Pump House and Stream Arbor
- Stabilized small-scale features – birdbath

Designed Woodland

The historic woodland character would be maintained and non-native, invasive vegetation removed to prevent further degradation of the woodland. The existing circulation system would be stabilized with added improvements for safe access to Dumbarton Oaks Park from the west branch of Whitehaven Street, NW.

Completed Tasks:

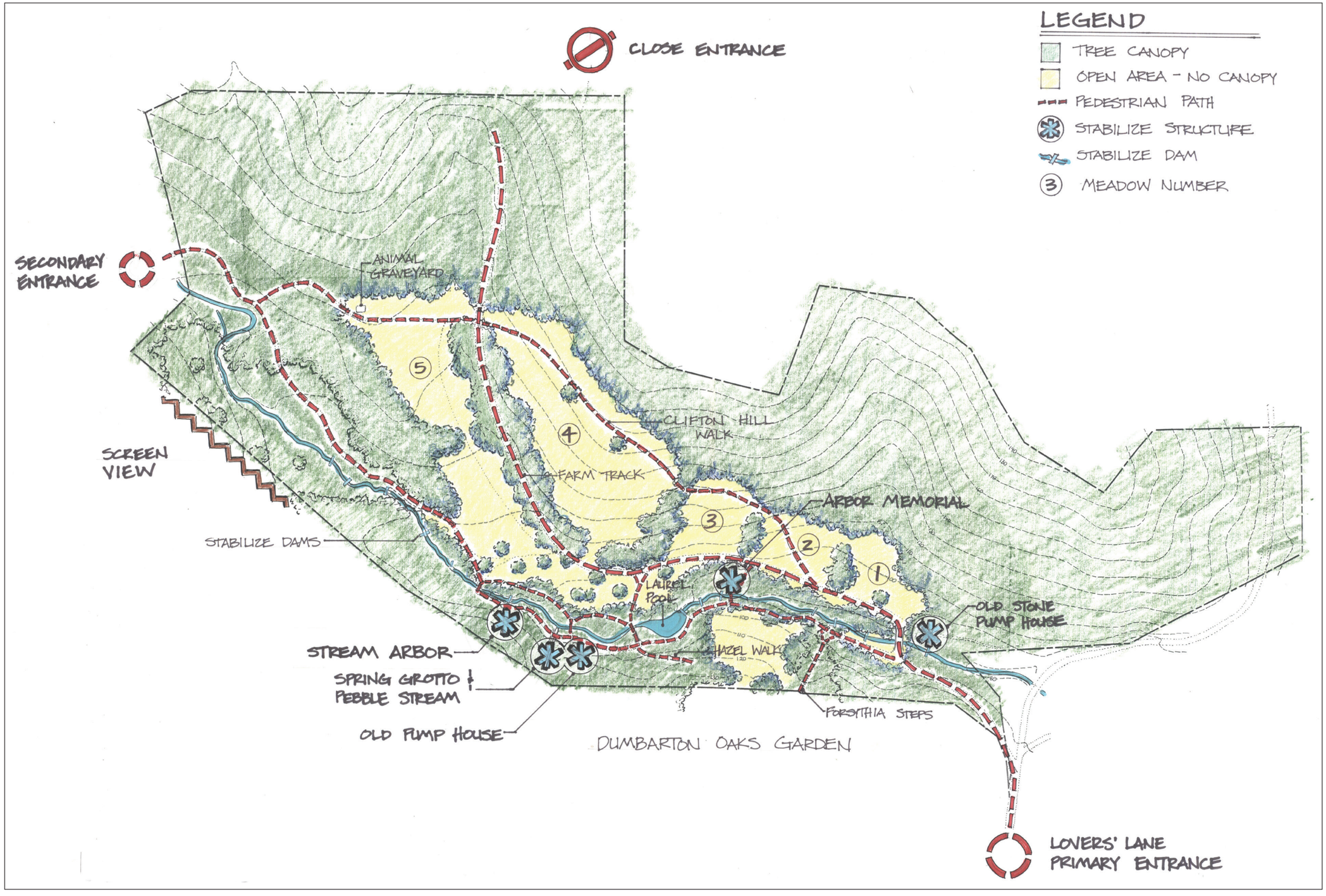
- Stabilize and maintained existing path from the west branch of Whitehaven Street

Meadows

The present extent of the five meadows would be maintained, and the non-native invasive and woody vegetation would not be allowed to encroach any further. There would be no attempt to restore the meadows to their original size. Any remnant historic vegetation, drifts of perennials and bulbs, and vegetation separating the meadows would be preserved to keep the historic character of the open glades and lines of tree dividing the five meadows. All site features, circulation systems (Clifton Hill Walk and farm track), and site furnishings (three cast-stone benches and animal gravestones) would be maintained in their current condition.

Northern Woodland

The historic character of the woodland would be maintained so that it continues to act as a buffer between the park and adjacent lands, as well as serve as a backdrop for views from the upper gardens and from within the park. To maintain the character of this woodland, non-native, invasive vegetation would be kept from spreading by removing invasive trees and vines along the woodland's southern border with the meadows. The entrance from the east branch of Whitehaven Street would be closed and the fence repaired.



Map 2.1 Alternative 1 – Preservation: Stabilizing the Landscape (CLP, August 1997).

Alternative 2: *Rehabilitation*: Interpreting the Farrand Landscape

General Concept:

This alternative takes the present-day uses and appearance of the park into consideration and retains the changes that have occurred. The spatial organization, as defined by the character of the vegetation rather than the plant palette, provides the parameters for this concept. The enclosed and open character of the various garden rooms along the stream, the meadows and woodlands would be redefined where they have been lost. In areas where certain design features no longer remain, strategically- placed benches and interpretive elements, such as low-profile wayside signs, would be used to explain Farrand's design. In areas where the integrity of the original design is still evident, structural features would be stabilized and, in some cases, restored. The historic paths would be improved and redefined throughout the entire park, but only those portions of the walks in the designed woodland with integrity would be reestablished.

Elements of the Plan:

Lovers' Lane

Same as Alternative 1.

Lovers' Lane Entrance and Beech Grove

The path through the Beech Grove, from the entrance gate to the stone bridge, would be narrowed to its historic width to emphasize the original formality of the corridor. The railroad-tie steps leading down to the East Falls from the path would also be repaired. An interpretive wayside with a site map would be provided at the entrance gate to orient visitors to the park. All other aspects of the Beech Grove as described in Alternative 1 would be the same.

Completed Tasks:

- Replicated and installed entrance sign
- Removed non-native, invasive vegetation
- Stabilized structural features – stone piers and hardware

Southern Slope

The emphasis would be on reestablishing the spatial organization of the open and enclosed areas as defined by the vegetation. Where the spaces are intact, the existing vegetation massing would be maintained. For the remaining areas, a planting plan would be developed with an emphasis on delineating the open and enclosed areas. This would include restoring the meadow once located

between the Forsythia Steps and Hazel Walk to reestablish the visual continuity of the shared open space between the upper and lower gardens. As in Alternative 1, historic vegetation would be maintained, while non-native, invasive vegetation would be removed. After the substantial removal of non-native, invasive vegetation, the historically wooded areas would be reforested according to current National Park Service criteria for native woodland. The ongoing work of reestablishing the vegetation on forsythia hill would continue according to the guidelines in the *Landscape Preservation Maintenance Plan*. The two remaining historic circulation connections to the upper gardens, the Forsythia Steps and the Hazel Walk, have not functioned for some time. To encourage visitor appreciation of both the visual and the historic physical connections between the two properties, the Forsythia Steps and Arch would be stabilized, and the original gate would be reinstalled with proper security measures and could be opened on special occasions. The abandoned Hazel Walk would be stabilized and an inconspicuous bench or low-profile wayside would be placed at the top of the path. The stepping-stone path along the pebble stream would also be rehabilitated to provide a safe walking surface for visitors walking up the slope to view the upper culvert grotto. A safe means of crossing the pebble stream, in keeping with its historic appearance, would be constructed. The spring grotto and pebble stream would be completely rehabilitated as well.

Completed Tasks:

- Stabilized Forsythia Steps
- Cleared vegetation off Forsythia Steps
- Removed non-native, invasive vegetation from slope
- Replanted forsythia hill with original forsythia root stock
- Stabilized structural features – Forsythia Arch
- Reinstalled original gate in Forsythia Arch

Stream Valley

To strengthen the connection between garden rooms, the historic stream path would be rehabilitated in its historic alignment, using appropriate materials. The serpentine layout and narrow width of the path are important components to maintain, along with such historic design features as "thresholds," edging and marker stones, and rustic footbridges. As noted above, a safe way to cross over the pebble stream would be designed, in a way that would not undermine the historic integrity of the stream path. A planting plan would be developed to restore the historic spatial organization by reestablishing vegetation to more clearly define the "rooms" in the valley. The two arbor structural features, Gray arbor memorial and Stream Arbor, would be restored to their original condition, using historic photographic documentation, and maintained. All the features associated with the stream course (dams, streambanks, retaining walls, and pools) would also be restored. The remaining landscape structures (Old Stone Pump House, the stone bridge, and the Old Pump House) would be

stabilized. Small-scale features, including the millstone, water wheel, and marker and edging stones, would be stabilized and maintained. Replications of the original benches would be placed in their historic locations along the stream path and the "Washington" bench at the Laurel Pool would be retained. Interpretive signs or a park brochure would be used to explain non-extant features, such as the Unicorn Lady statue (original located at Dumbarton Oaks Garden-Directors Garden) and birdbaths (fragments of shell shaped birdbath removed by NPS for conservation), which have been removed from the park.

Completed Tasks:

- Restored rustic log footbridges crossing at Gray arbor memorial and Clapper Bridge Falls
- Stabilized structural features – Old Stone Pump House, and the Old Pump House
- Stabilized small-scale features – birdbath

Designed Woodland

As in Alternative 1, the historic character of the designed woodland would be maintained. Non-native, invasive and non-historic vegetation would be removed to prevent further degradation of the woodland. The one existing woodland path and historic remnant path would be rehabilitated to their original widths, based on historic documentation. The rehabilitation of these two paths would enable visitors to experience the upper fourth of the circulation system, which was abandoned (ca. 1975). Selected plantings from the existing plant palette would be added along the paths to help define their edges. The existing path from the west branch of Whitehaven Street, NW would be modified to deter bicycle use and improved for safe pedestrian access. A new entrance sign and interpretive wayside with a plan of the park would be provided at the beginning of the path from the west branch of Whitehaven Street, NW.

Completed Tasks:

- Maintained existing path from the west branch of Whitehaven Street

Meadows

The boundaries of the meadows would be cut back to their historic configuration and maintained at this size. The first four meadows (from east to west, meadows #1, #2, #3 and #4) would be mowed once a year to maintain their original grassland appearance. The northern third of meadow #5 would be kept closely mowed to provide passage between the designed woodland and the farm track. As in Alternative 1, the remnant historic vegetation would be preserved to maintain the historic character. To enable visitors to experience the spatial qualities of the meadows, as originally designed, the Clifton Hill Walk and the farm track would be rehabilitated to their historic alignment and width. No paths would be designated in meadow #5; instead, visitors would choose

between the designed woodland and farm track routes. To provide visitors with the opportunity to appreciate views down to the stream valley, the NPS would place benches in inconspicuous locations along the Clifton Hill Walk. All other site furnishings (three cast-stone benches and animal gravestones) would be maintained in their current locations.

Completed Tasks:

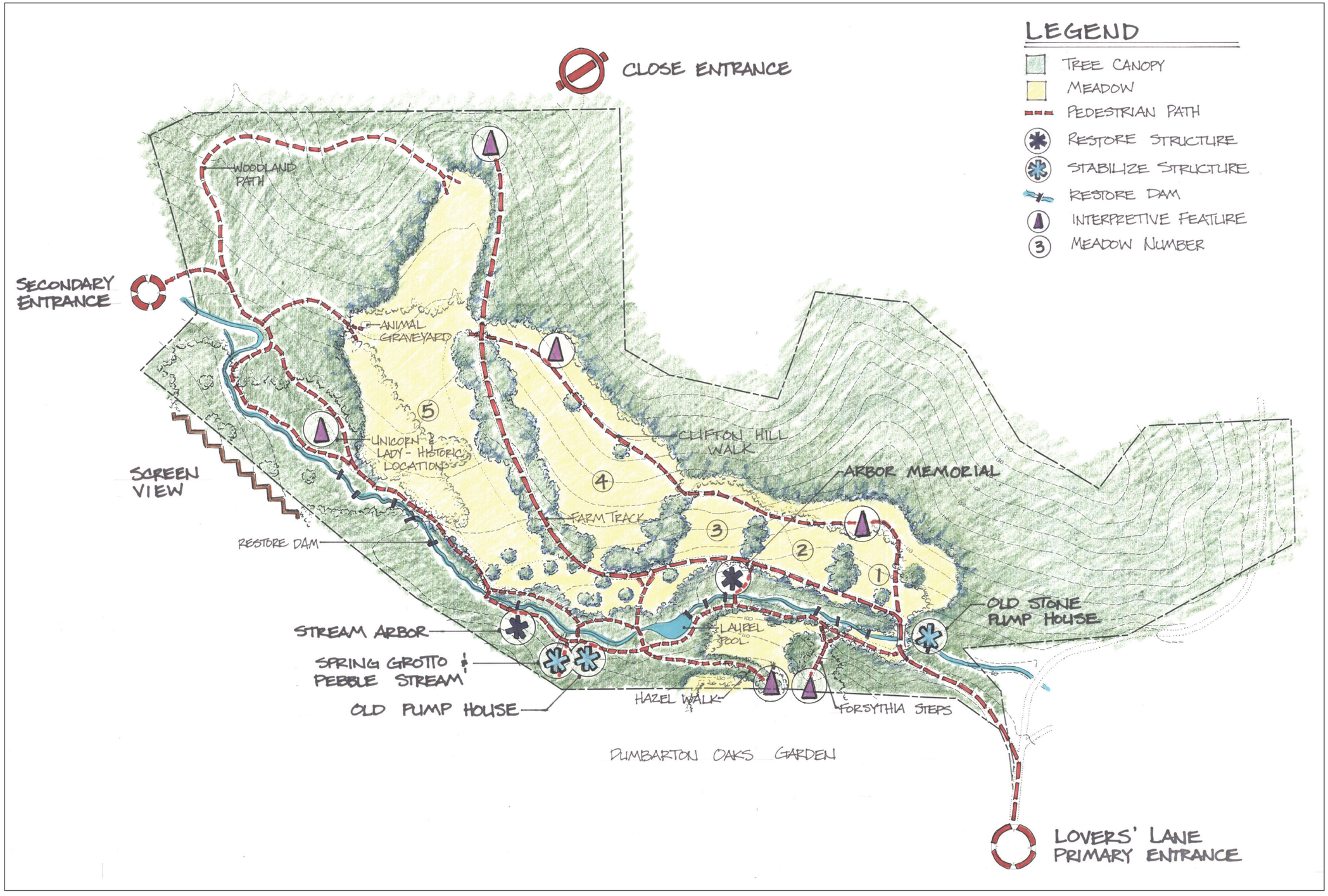
- Redefined the historic configuration of the first four meadows (from east to west meadows #1, #2, #3 and #4)

Pending Tasks:

- Remove non-native, invasive vegetation from the meadows and reestablish native meadow vegetation
- Realign Clifton Hill Walk

Northern Woodland

The entrance from the east branch of Whitehaven Street, NW would be closed and the boundary fence would be repaired to reduce the impact of cut-through traffic on the historic landscape. The NPS would place an unobtrusive bench at the end of the north segment of the farm track to create a destination point. Here, visitors could enjoy views back down the road corridor and into meadow #5. All remaining aspects of the woodland's historic character would be maintained as in Alternative 1.



Map 2.2 Alternative 2 – Rehabilitation: Interpreting the Farrand Landscape (CLP, August 1997).

Alternative 3: *Restoration*: Reclaiming the Historic Landscape

General Concept:

This alternative would restore Dumbarton Oaks Park to the landscape design existing in the 1940s, when the property first became a public park. At that time, the relationship between the formal upper gardens at Dumbarton Oaks and the park's naturalistic stream valley was more readily apparent than at present. The two sections were joined together by the clarity of Farrand's design concepts, such as spatial organization that created views and vistas between the two sites, as well as connecting paths. Thus the historic restoration would aim to reinforce the conceptual and physical relationships between the park and Dumbarton Oaks Gardens.

Treatment proposals would reestablish open and enclosed spaces, open up views and vistas, restore structures and walks throughout the park, and reconnect paths between the two properties. For example, the entire "circular" walk and three of the connecting paths would be brought back to their historic physical appearance, including restoring the original detailed planting along the stream and the vegetative massing along the woodland routes. Some modifications to the plant palette would be made due to current growing conditions.

Elements of the Plan:

Lovers' Lane Entrance

The National Park Service would explore securing the closure and transfer of jurisdiction of Lovers' Lane from the District of Columbia to the adjoining property owners to gain control of access and management of the main entrance to Dumbarton Oaks Park. (The National Park Service has jurisdiction over Montrose Park on the east, and Harvard University owns Dumbarton Oaks Garden on the west.) Rock Creek Park and Dumbarton Oaks management could then restore and maintain the low stonewall between the lane and Montrose Park, and the stone gutter at the base of the Dumbarton Oaks Garden retaining wall. As in Alternatives 1 and 2, an entrance sign would be installed at the intersection of Lovers' Lane and R Street, NW, and an aesthetically pleasing gate would be placed at the top of Lovers' Lane to prevent general vehicular traffic from entering the park. A limited number of accessible parking spaces would be provided for handicapped visitors at the bottom of Lovers' Lane and a system of advance notification of visitors needing access would be established so Rock Creek Park staff could open the R Street gate. Invasive vegetation would be routinely removed from the gutter system and the arching tree canopy along Lovers' Lane would be maintained.

Completed Tasks:

- National Park Service acquired ownership of the Lovers' Lane corridor from the District of Columbia
- Replicated and installed entrance sign
- Stabilized structural features - stone gutter and Dumbarton Oaks Garden wall

Lovers' Lane Entrance and Beech Grove

A planting plan would be developed for the restoration of the Beech Grove. The plan would include the replacement of missing plantings, such as the massing of mountain laurels on either side of the path, and the removal of non-native, invasive plants that compete with the historic vegetation. The path would be restored to its original alignment, narrower width and overall appearance. As in Alternative 2, an entrance sign and interpretive wayside with a site map would be placed outside the entrance gate to orient visitors. All stone structural features and the wooden gates would be restored.

Completed Tasks:

- Replicated and installed entrance sign
- Removed non-native, invasive vegetation
- Restored wooden gates and stone structural features

Pending Tasks:

- Replant the understory and massings of the missing vegetation based on a planting plan for Lovers' Lane Entrance and Beech Grove

Southern Slope

The primary restoration effort on the southern slope would be the replanting of the vegetation based on historic documentation. A planting plan would be developed to guide the restoration, with emphasis on the replacement of missing trees, shrub massing, groundcovers, and drifts of herbaceous perennials and bulbs. Historic vegetation would be maintained, while non-native invasive and non-contributing vegetation would be removed. All structural features would be restored to their historic appearance and condition, including three of the connecting paths (Forsythia Steps, Hazel Walk, and the stepping-stone path). The iris path, however, is not recommended for restoration because little evidence of it remains. The fence marking the property line between Dumbarton Oaks Park and Dumbarton Oaks Gardens would be replaced with a less visually intrusive one. The National Park Service and Dumbarton Oaks Gardens would also work together to reestablish the historic views and vistas between the upper gardens and the stream valley. These would be recreated and managed to strengthen the original visual and physical relationships that Farrand incorporated into her landscape design for the estate.

Completed Tasks:

- Stabilized Forsythia Steps
- Cleared vegetation off Forsythia Steps
- Replanted forsythia hill with original forsythia root stock.
- Stabilized structural features – Forsythia Arch
- Reinstalled original gate in Forsythia Arch
- Replaced rusted boundary fence with new less intrusive fence.

Pending Tasks:

- Stabilize remnant concrete base material for abandoned iris path
- Work with Dumbarton Oaks Gardens to strengthen the visual connection between the upper gardens and stream valley

Stream Valley

Farrand's selection of plantings along the stream would be restored. This restoration would include replacing missing trees, shrub massing, and drifts of herbaceous perennials and bulbs along the path, maintaining the existing historic plantings, and removing invasive vegetation. Similar to Alternative 2, the stream path restoration would be based on photographic documentation and utilize appropriate historic and compatible contemporary materials. The serpentine alignment and narrow width of the path, and design features, such as thresholds, edging and marker stones, and rustic footbridges, are important components to restore and maintain. A safe crossing over the pebble stream would need to be developed, as well as an accessible route through the park. Part of the route would use the lower stream path (north side), and a connection could be made to the farm track to provide a loop route back to the stone bridge. All historic structures and existing small-scale features would be restored and maintained, as in Alternative 2. The birdbaths would be replicated from the deteriorated originals and placed in their historic locations. Reproductions of the original teak-style benches would be placed in historic locations along the stream path. The existing "Washington" bench at the Laurel Pool would be removed. With permission from the artist and/or Dumbarton Oaks Gardens, a reproduction of the Unicorn Lady statue would be placed along the upper stream path on the site of the original statue.

Completed Tasks:

- Reestablished the serpentine alignment for a portion of the lower south stream path
- Restored rustic log footbridges crossing at Gray arbor memorial and Clapper Bridge Falls
- Restored structural feature – Old Stone Pump House
- Washington bench removed from the Laurel Pool area

Designed Woodland

A planting plan would be developed for restoration of the woodland that includes the replacement of missing trees, shrub massing, and drifts of bulbs and herbaceous perennials. Historic vegetation would be maintained and non-native, invasive and non-contributing vegetation would be removed. All the paths through the designed woodland would be reestablished and brought back to their historic appearance. Restoring the long-lost northern end of the original circulation patterns would complete the full length of the pedestrian progression designed by Farrand, which begins in the formal upper gardens and extends to the informal "wilderness" of the designed woodland. To reinforce the park as a destination, the existing path from the west branch of Whitehaven Street, NW would be closed and the boundary fence would be reestablished to deter cut-through use.

Meadows

The primary difference between treatment for the meadows in Alternatives 2 and 3 is that the historic plant palette would be restored in Alternative 3. After redefining the historic configuration and size of the meadows, the historic drifts of perennials and bulbs and grassed areas would be restored, where lost, and maintained. In the open areas, historic specimen trees would be maintained, missing ones would be replaced in their original locations, and all would be replaced in-kind, in the same locations, when lost. The lines of trees dividing the meadows would also be restored. This would involve clearing the understory vegetation growing beneath these vegetative boundaries to open up the views between the meadows. Non-native, invasive vegetation would be removed from the meadows, as well. Other vegetation management practices, such as mowing, would be the same as in Alternative 2. The farm track would be restored to its historic agrarian character. The Clifton Hill Walk would be restored in its approximate historic alignment, although historic width and surface of the path have yet to be determined. The site furnishings would be treated the same as in Alternative 2 and maintained in their current location. New benches would be placed in inconspicuous locations along the Clifton Hill Walk, based on Farrand's recommendations for placement of benches along the walk.

Completed Tasks:

- Redefined the historic configuration of the first four meadows (from east to west meadows #1, #2, #3 and #4)
- Removed non-native, invasive vegetation from lines of trees dividing the meadows

Pending Tasks:

- Remove non-native, invasive vegetation from the meadows and reestablish native meadow vegetation
- Realign Clifton Hill Walk

Northern Woodland

The historic vegetation between the woodland and the meadows would be restored to its original character to emphasize the historic transition of the border between the open meadows and the enclosed northern woodland. All other recommendations concerning the maintenance of the historic character of the woodland would be the same as in Alternative 2. The entrance from the east branch of Whitehaven Street, NW would remain closed and the boundary fence would be repaired as in Alternative 2.

Map 2.3 Alternative 3 – Restoration: Reclaiming the Historic Landscape (CLP, August 1997).

CHAPTER 3:
TREATMENT PLAN

Management Issues and General Recommendations

The following issues were formulated between1997-2003 and ***updated in 2011*** to address the management and preservation of the significant cultural landscape features of Dumbarton Oaks Park. All of these management issues remain relevant and reflect the current thinking of the project team based on feedback from the local community. These issues continue to provide the framework for the development of a treatment plan, encompass a wide range of program areas – from *land use* to *interpretation* – and describe the concerns associated with each. Since the development of these general recommendations in 2003, the National Park Service has worked to correct many of these issues using the guidance provided in the original *Management Issues and General Recommendations*.

Land Use

Management Issue: The naturalistic valley of Dumbarton Oaks was designed for leisurely activities, such as strolling, reading, and contemplation – all appropriate for an estate garden setting. When the Blisses gave the property to the National Park Service in 1940, they envisioned the new public park created from their beautifully designed landscape as a destination for the enjoyment of pedestrians only. The Blisses could not have foreseen that many visitors would subsequently perceive the park as a means to pass through one neighborhood to the next, using the paths as part of a larger city-wide trail network that did not exist during the Farrand era. Now many visitors use the park's east-west trails as a short cut from R Street, NW, Lovers' Lane, and Rock Creek and Potomac Parkway to Wisconsin and Massachusetts Avenues, NW. Some cut-through uses have caused major damage to significant cultural and natural resources, and have created safety hazards. The undesirable or incompatible uses include bicycle riding, and unrestrained (unleashed) dog walking.[1]

General Recommendation: By advocating Dumbarton Oaks Park as a destination park and reinforcing and interpreting Farrand's original design ethic, many of these undesirable or incompatible uses of the site could be curtailed.

Access and Circulation

Management Issue: In addition to the Lovers' Lane Entrance, two other pedestrian entry points lead to Dumbarton Oaks Park, thus lessening the prominence of the Lovers' Lane corridor. In other areas of the park, where the historic path system has been abandoned, social trails have developed. In addition, the three entrances, the path system, and the social trails are not currently accessible to the disabled.

General Recommendation: To provide universal access to the park, where possible, one of the non-historic entrances could be reconfigured as the accessible route. The entrance at Lovers' Lane would be retained in its historic configuration to reinforce its prominence as the original entrance. To reinforce its connection to the Georgetown neighborhood, the Dumbarton Oaks Park paths should be connected to the larger Rock Creek Park and local trail networks. An accessible route could be provided within the park using the existing path alignment where possible, following the guidelines for the Architectural Barriers Act, with specific guidance for recreation areas and trails provided in the Guidelines for Outdoor Developed Areas (ABA, Outdoor Developed Areas).[2]

In the past, service vehicles have been driving freely within the park, causing damage to the landscape. Because of the fragile nature of this historic designed landscape, only the smallest vehicle needed for a particular maintenance task should be permitted into the park. Design studies are needed to improve the appearance at Lovers' Lane and R Street, including a pedestrian-friendly gate.

Vegetation

Management Issue: The vegetation has changed considerably since the initial implementation of Farrand's design. Much of the subtle and harmonious character of the original plantings has been lost. Instead the patterns of vegetation vary widely with dense shade canopy where understory plants struggle to grow, to large open areas where non-native, invasive vines and shrubs have smothered the historic vegetation. In other areas within the Stream Valley, the original plantings have "naturalized" as Farrand intended. In all areas of the park, however, non-native, invasive plants grow vigorously and have changed the character of the original planting.

General Recommendation: An updated plant survey should be conducted to reflect changes in the landscape since the 1997 plant survey. Rather than re-creating the Farrand Plan, the horticultural palette should be adapted and revised to create a plan evocative of the original but sustainable to current growing conditions and maintenance practices. The updated plan should be developed to guide the routine maintenance, preservation, and replacement of Farrand-era plants, and the removal of non-historic/non-contributing and non-native, invasive plants. Care should be taken to retain the character of the Farrand design – striking a delicate balance between natural and cultural resource management objectives.

Water Systems

Management Issue: Stormwater runoff from adjacent sites has significantly damaged the cultural and natural resources in Dumbarton Oaks Park, causing major streambank erosion and subsequent damage to structural features (dams and walls), as well as undermining and destroying portions of the paths. To

prevent further deterioration, the dams have been stabilized in accordance with a *Landscape Preservation Maintenance Plan*, which was prepared in 1997. A 1999 hydrologic survey and 2011 hydrologic assessment reaffirmed the findings that managing stormwater runoff is the most critical issue to deter subsequent loss of features. These findings also noted that the existing stream channel is not designed for even moderate increases in stormwater runoff.

General Recommendation: Hydrologic changes continue to occur in the Dumbarton Oaks Park drainage. Recommendations from the 2011 hydrologic assessment should be considered and prioritized to address on – /off-site stormwater detention /retention or other low impact development engineering solutions that will protect the stream channel and its associated historic features during normal and above-average flows. For long-term management, the park should develop a comprehensive stormwater management plan / environmental assessment that examines water volume flows from outside as well as within the park, and proposes mitigation to reduce the quantity and improve the quality of these stormwater flows.

Structures

Management Issue: The damaging effects of encroaching vegetation, weathering, and vandalism have caused the structural features to deteriorate. Over the years, periodic maintenance has been deferred, and all structures are now in various states of decay. Therefore, the treatment plan should deal with varying degrees of stabilization, preservation, restoration or rehabilitation.

General Recommendation: To preserve all significant structural features, including dams, walls, and garden structures, the NPS should restore all park structures and include them in a cyclic maintenance program. Once stabilized, all drainage systems should be kept in good working order. This includes the severely deteriorated Lovers' Lane drainage channel (working in cooperation with Dumbarton Oaks Gardens), pebble stream, Spring Grotto, Gray arbor memorial, Old Pump House, Old Stone Pump House, stone bridge, and Lovers' Lane Entrance piers.

Small-Scale Features

Management Issue: Farrand's signature attention to detail is evident in the design and selection of materials used within Dumbarton Oaks Park. The cast-stone benches and birdbaths, marker and edging stones, rustic log footbridges, and gravestones in the pet cemetery are all an integral part of this fabric. These features have been among the first to deteriorate due to natural weathering, vandalism or removal to preserve the feature.

General Recommendation: All remaining small-scale features should be preserved and maintained in their historic locations. Replication may be necessary if pres-

ervation repairs are not possible and accurate documentation exists to provide essential design information.

Interpretation

Management Issue: When visitors pass through the Lovers' Lane Entrance gate, many do not realize the historic significance of Dumbarton Oaks Park. A replicated 1940s entrance sign provides the only recognition that they are entering into a National Park Service-managed site. Also there is very little acknowledgment that Dumbarton Oaks Park is an entity with historic associations to the more celebrated Dumbarton Oaks Gardens. A *Long Range Interpretive Plan for Rock Creek Park* (2010), which includes Dumbarton Oaks Park, was prepared and recommends upgrades to the interpretation utilizing various interpretive devices. Although a cell phone tour is available, most visitors are unaware of the tour or are not provided enough information to understand the full extent of Farrand's design. At the three entrances to the park, NPS regulatory signs emphasize the protection of the resources by stating that visitors should stay on the trails and keep dogs on their leashes.[3]

General Recommendation: Install park entrance signs at the two non-historic entrances of Whitehaven Street, NW, to reinforce the boundaries of the historic park and update placement and information provided at the Lovers' Lane Entrance. Based on the interpretive plan, install waysides at the entrances to orient visitors, make available an updated version of the Dumbarton Oaks Park brochure, and provide occasional interpretive programs appropriate for a private estate garden setting. Rely on new technologies to provide visitors with current information regarding seasonal interests, volunteer opportunities, and special tours of Dumbarton Oaks Park.

General Concept

In 2003, park management selected Alternative 3, "*Restoration*: Reclaiming the Historic Landscape" as the preferred alternative and as the "vision" for the future management of the site to restore Dumbarton Oaks Park to the 1940-1951 period. The following treatment plan reflects this initial direction but it also reflects a refreshed vision (2011) spurred on by a renewed public interest in Dumbarton Oaks, the most noted design of Beatrix Farrand's career. The implementation of the treatment plan of Dumbarton Oaks Park will accomplish two things: it will safeguard a significant piece of a signature work of one of America's foremost landscape architects for future generations, and it will ensure our ability to preserve and protect this important cultural landscape in the coming years. Although the term "restoration" is used to describe the treatment, the plan is actually a combination of preservation actions, ranging from *stabilization* of historic fabric, to *rehabilitation* for new uses that are compatible, and lastly to *restoration* of deteriorated historic features. (See *Management Philosophy – Treatment Approach* for definitions.)

Rock Creek Park management recognizes it may take many years to complete this restoration plan. In order for implementation to be successful, Rock Creek Park must have the resources to maintain an area or feature once it is restored; otherwise, such efforts would be futile. Also, before investing financial and human resources for implementing the treatment, mitigating the stormwater runoff should be the first priority. Another important factor in ensuring the park's successful preservation is informing the community and the greater public of

Figure 3.1 Beatrix Farrand at Reef Point property in Maine. (Photo Courtesy of the Environmental Design Archives, University of California, Berkeley).

the significance of this important site, the necessity for this plan, and garnering their support for its implementation.

The park's overall spatial organization and progression, from formal to naturalistic in its spaces and in the design and arrangement of its features, provides the keys to understanding Farrand's design and guiding the implementation of the treatment plan. The park's relationship with the upper gardens should be strengthened by re-opening historic views and vistas between the two sites and by restoring the connecting paths where possible. A system of walks and connecting paths should be reestablished to their historic appearance and linked to the three entrances to the park as part of the larger Georgetown community and Rock Creek Park trail networks.

A comprehensive planting plan should be developed to reestablish and maintain the original design, as discerned from historic documentation. Farrand's design relies on the arrangement of plant material to define and enhance spaces and to create the park's spatial organization. Where it is not possible to determine specific historic locations and types of plant materials, plant palettes should be developed for use in each landscape character area. Plants to be used should be selected from these palettes based on the desired historic character – *e.g.*, shade trees for canopy, shrub massings to reinforce spaces or perennials as edge plantings. The initial focus should be to reestablish the various layers of planting along the stream and the woodland walks. Plant selection should also reflect current growing conditions, use of non-invasive species, and the commercial availability of species. Interpretation of the beauty and intricacy of Farrand's design through the use of traditional signs, brochures, and tours, as well as with digital technologies will help develop the visitor's appreciation for the landscape.

The following description of the treatment plan is divided into two parts – the *Overall Site*, followed by the seven *Landscape Character Areas* as defined in the *Management Philosophy* section. This narrative organization also provides the framework for phased implementation of the treatment plan. Treatment for the *Overall Site* landscape characteristics includes recommendations that should be undertaken throughout the park. Site-specific recommendations are listed for individual *Landscape Character Areas*. For both the overall site and individual character areas, a brief discussion of the historic design intent is presented, along with a summary of the 2011 condition. *Recommended Treatment Actions* follow and provide direction toward the successful implementation and completion of the landscape treatment plan.

Overall Site

The development of Dumbarton Oaks Park from 1921 to 1951 is the result of a well-documented collaboration between the accomplished "landscape gardener," Beatrix Farrand, and her cosmopolitan and influential clients, Robert Woods Bliss, diplomat in the US Foreign Service and U.S. Ambassador to Argentina, and his wife Mildred Bliss, the owners of Dumbarton Oaks. Mildred worked closely with Beatrix Farrand to transform the property surrounding their 1801 Federal-style house into series of garden rooms that progressed from a upper formal terrace gardens to an informal hillside and lastly to the naturalistic valley garden. After the Blisses divided Dumbarton Oaks in 1940, giving the upper portion to Harvard University and the lower to the federal government, Farrand modified her original design to adapt the valley for use as a public garden.[4] The spatial relationships and most of the physical connections between the two properties remained intact during this transition. Even though Farrand's progressive design, from formal to informal to naturalistic, was split in two, each portion retained enough of its design features to portray the progression and stand alone as a significant historic designed landscape. However, the interpretation of both properties benefits when they are considered in context and viewed as a whole. As a result, these concepts and relationships guided the development of the treatment plan and all its associated recommendations.

Stormwater Management

When Beatrix Farrand originally laid out the various water features in the stream valley in the 1930s, her design consisted of cascading waterfalls, tranquil pools, and water follies set within and along this tributary stream to create her desired effect. Because this stream is a dynamic natural system, water levels are unpredictable. From the very beginning, Farrand's water features were undersized to withstand the fluctuations in the water levels, and they intensified the flow by channelizing and hardening the streambanks with stone retaining walls and creating obstructions from the waterfall dams. A headwaters pipe located on adjacent U.S. Park Reservation 357 is the only perennial source of water for the stream channel, most likely originating from a natural water source that was subsequently routed in a pipe as Northwest Washington developed at the beginning of the 20th century. All other discharge pipes are most likely connected to stormwater systems from adjacent properties.

Stormwater runoff, more than any other factor, has adversely impacted the resources in Dumbarton Oaks Park. The Dumbarton Oaks Park watershed is largely developed and includes a high percentage of impervious surfaces (roads, parking lots, and rooftops). Runoff from adjacent properties, primarily surface water and direct flow from stormwater pipes that drain directly into the park, contributes to the degradation of the park resources and create voluntary stream channels during storm events. This situation has seriously degraded the condi-

tion of the path system (circular walk), the designed water features (waterfalls, stone retaining walls), and historic/native vegetation growing within the park.

Before the National Park Service can implement any significant part of the Restoration treatment plan for Dumbarton Oaks Park, proposed mitigation measures – many of which are considered below – reduce the quantity (flow) of stormwater flowing into the park.

Recommended Treatment Actions:

- Implement findings from the 2011 Hydrologic Analysis after consultation and compliance (NEPA and Section 106) to ensure protection of the Farrand-era features.
- Coordinate efforts between all adjacent landowners and related agencies and institutions, including the National Park Service, United States Navy, the District of Columbia government, and DC Water, to reduce stormwater runoff from outside the park using a variety of management methods, such as bioswales, rain gardens, or a bioretention pond combination, providing a slow release into Dumbarton Oaks Park basin.
- Repair and revegetate severely eroded gullies using Regenerative Stream Conveyance (RSC) techniques to prevent storm events from re-eroding these fragile slopes.
- In coordination with Dumbarton Oaks Gardens, implement green infrastructure / low-impact development practices along the boundary fence between the two properties to reduce runoff from the Gardens into the park, and to allow the flows to infiltrate into the ground.
- Remove sediment in-fill from the stream pond sections and on the upstream side of all dam structures. Initially this should be done annually, while the invasive vegetation management treatments are underway and then this can be scaled back to every three years (as recommended by Farrand) once the banks and slopes are revegetated. The frequency can be reassessed once there is some stability in the stream system based on sediment loads. This will increase the water capacity of the pools and reduce flow velocities during storm events to decrease the chance of damage to in-stream structures.
- Retain as much of the stormwater from the headwaters outfall in a bioretention holding basin along the northwest border (U.S. Reservation 357) and release slowly into the stream channel to control outflows during storm events. During the design development phase, restrict effects of basin within the historic boundaries of Dumbarton Oaks Park.
- Use forested vegetative "buffers" around the Dumbarton Oaks Park boundary to minimize surface runoff and increase filtration rates within the forested areas. This is especially recommended along the southwest slope bordering the Jelleff and Safeway properties where the slopes are covered by non-native, invasive vines, shrubs and debris.

- Foster stewardship of water resources through public involvement.
- Encourage public education to reduce impacts to the Dumbarton Oaks Park watershed.

Spatial Organization

Spatial organization may have been the most important characteristic of the design of the naturalistic landscape. Farrand created a thematic progression, from formal to informal to naturalistic, by delineating a series of seven spaces and garden rooms that extend across the valley. The circulation system united these seven areas – Lovers' Lane, Lovers' Lane Entrance and Beech Grove, Southern Slope, Stream Valley, Designed Woodland, Meadows, and Northern Woodland. Understanding the progressive arrangement of these designed spaces is the key to implementing the restoration of Farrand's design.

Over the years the definition of the gardens rooms has been eroded by a lack of understanding of the intricacies of the vegetation palettes and material selection that emphasized the progression from the formal to informal to the naturalistic.

Recommended Treatment Actions:

- Maintain the unified design vocabulary of "garden" and "park" by using historic materials and repeating forms common to both properties to reinforce the theme of progression. The material elements of individual features contribute to the integrity of the design progression. Use original stone and wood, if in good condition, or use replicated materials in the repair or restoration of walls, pathways, drainage features, arbors, roofs, bridges, and water features.
- Reestablish the sense of spatial definition for the garden rooms when updating the planting plan. (See *Overall Site – Vegetation.*)

Circulation

Farrand's design of the circulation system played a vital role in developing the visitor experience she intended for the naturalistic garden. Farrand incorporated existing roads into the development of a system of paths to create a "circular walk." Modifications that she made to the system after the property became part of the National Park Service include the addition of the Clifton Hill Walk and the widening of the stream path from three feet to five feet. About half of the original circular walk still exists. However, the last section, from the upper stream path into the designed woodland, has been lost. In addition, Dumbarton Oaks Park is accessible, but is limiting and challenging, especially to those with physical disabilities, because of the extreme changes in grade and the steep entrance road (Lovers' Lane). Responding to current neighborhood use patterns, two non-historic entrances from the west and northeast branches of Whitehaven Street connect to a designed woodland path and the farm track across steep grades.

Recommended Treatment Actions:

- Maintain Lovers' Lane as the main entrance to Dumbarton Oaks Park.
- Improve the existing entrances from the west and northeast branches of Whitehaven Street, NW, which currently serve as secondary entrances to Dumbarton Oaks Park. Although they are not historic entrances, Rock Creek Park management recognizes that these trails connect Dumbarton Oaks Park to a larger trail network and serve as an important link for pedestrians entering the park from the west and north. The western spur paths to Whitehaven Street, NW will connect to one of the historic woodland paths and the northeastern spur path will connect to upper reaches of the farm track. These additions will not affect the alignment of the historic paths.
- Restore the entire circular walk in its historic alignment.
- Install a stable base and new trail surface that is compatible with the character of the original trail and can withstand runoff and visitor use.
- Provide an accessible route from the western spur of Whitehaven Street, NW down to the lower woodland path. A route could be established along the north side of the stream (upper stream path and north stream path) and then connected to the lower portion of the farm track to the Lovers' Lane Entrance. Avoid development of accessible routes that would involve drastic changes to the historic circulation. Because Farrand took advantage of the subtle and dramatic changes of grade in the valley – in the thresholds incorporated into the design of the lower south stream path and in the paths that hold to the steeper slopes – most of the historic circulation cannot be rehabilitated to meet ABA, Outdoor Developed Areas accessibility guidelines without losing the integrity of its original character. The narrowness of the historic paths also limits mobility. The trail surface must be compatible with the character of the original trail and be able to withstand frequent flooding and heavy visitor use.
- Coordinate all path improvements with a park trails committee, which could consist of the following disciplines: resource management specialist (cultural and natural), safety officer, accessibility coordinator, and trail maintenance specialist. An interdisciplinary team approach may ensure a reduced impact on the pathway system's historic characteristics.

Views and Vistas

Panoramic views and defined vistas played an important role in the Dumbarton Oaks design. Farrand took advantage of the sloping topography in the development of points of view, the placement of benches, and layout of paths. She also utilized the rising topography of Clifton Hill on the opposite side of the stream as a backdrop for the panoramic views from the formal gardens. However, existing mature vegetation and, in some instances, invasive overgrowth now obscure many of the views and vistas designed by Farrand.

Recommended Treatment Actions:

- In cooperation with Dumbarton Oaks Gardens, reestablish lost views and vistas from the upper gardens to the stream valley, based on historical documentation.
- Promote the visual connection between the upper gardens and stream valley by maintaining herbaceous and woody vegetation at a low height to prevent it from growing on the fence between the two properties and obstructing important views.
- Preserve the open view from the Stream Arbor and Clapper Bridge Falls to the fifth meadow and up the stream valley (location of the Unicorn Lady statue).
- Reestablish views along the stream path that provided visual connections between garden rooms.
- Reestablish the views from one meadow to the next by clearing the understory vegetation growing beneath lines of mature trees between the meadows.
- Preserve the panoramic views from the Clifton Hill Walk down to the stream valley by keeping the meadows clear of woody vegetation.
- Restore the northern woodland as a backdrop for panoramic views from the upper gardens by removing non-historic or invasive vegetation growing within and along its southern edge, adjacent to the Meadows.

Vegetation

Although Farrand never created a formalized planting plan for the naturalistic garden, the planting played an important role in defining the spatial organization of the outdoor rooms. As much as possible, Farrand incorporated existing vegetation into her design, while adding woody understory trees, shrubs, vines, herbaceous perennials, and spring-flowering bulbs. (See *Appendix* for consolidated plant list, prepared from CLR *Part 1* and updated.) She utilized large specimen trees as "markers" for the intersections of paths, seating areas, turns, and other significant features. She did not rely on any one particular plant, but used the color, texture, and form of the vegetation as a whole to create the desired effect. The plant palette she chose for Dumbarton Oaks Park was not a true native collection. The plants she selected, however, possessed characteristics that harmonized with the landscape's informal design.

Today, most of the park has changed from a naturalistic garden to a woodland of pioneer and climax species. Volunteer trees and shrubs and non-native, invasive plant materials have upset the balance and fragmented the unity of the original design, especially within the understory plantings. Surprisingly, the ground layer still has an abundance of spring herbaceous perennials and flowering bulbs. Unfortunately, many of the invasive plant materials that now threaten the woodlands and meadows were part of the Farrand's original plant selection

for the naturalistic garden. (See CLR *Introduction – Terminology* for vegetation category definitions – *i.e.*, native vs. non-native.)

Recommended Treatment Actions:

- Conduct a plant inventory every ten years, building on previous surveys completed in 1997-1998 (NPS) and 2013. Since the initial inventory was conducted, there are noticeable threats from new plant invaders that upset the spatial qualities and prompt monitoring of these threats on an annual schedule.
- Organize a *Plant Strategy Team* made up of community representatives and NPS professionals to complete and expand the *Landscape Preservation Maintenance Plan* and to examine and monitor areas for evidence of pests, as well as other threats to the remaining historic vegetation, following Integrated Pest Management strategies as administered by the NPS.
- Prepare a *Planting Plan* for the restoration of all vegetation, including the canopy and sentinel trees, shrub masses, groundcover, and drifts of herbaceous plants and bulbs. The plan would incorporate information found in the CLR *Part 1* (see *Analysis and Evaluation – Vegetation*) related to the restoration of the historic plant palette, including removal of non-historic plants, installing new plantings, and maintenance. Based on the National Capital Region's approved "Non-native, Invasive Vegetation Decision Process," remove all non-native, invasive plant materials that compromise the spatial organization and pose the greatest threat to the balance of the naturalistic garden. This includes those plants that may have been introduced by Farrand (including porcelainberry, multiflora rose, Japanese honeysuckle, oriental bittersweet and Chinese wisteria). Select as replacements non-invasive plants with similar character to the originals that conform to Farrand's design.[5] (See *Appendix* for complete plant list for each vegetation management zone as defined by the CLR *Part 1*.)
- Protect all areas during the revegetation process and isolate from all foot traffic with temporary, lightweight, non-intrusive wire mesh or other fencing as recommended by park staff and approved by the park superintendent.

Interpretation

In 1940, Farrand proposed designs for signs made of various materials to identify some of the water features and specified their locations on a series of drawings. However, none were ever installed by the National Park Service. The NPS did, however, install wooden signs at the stone bridge and Laurel Pool, but their text is not known. Two entrance signs were installed by 1945: one at the top of Lovers' Lane at R Street, NW, and the other at the Lovers' Lane Entrance gate, which displayed the name of the park, the hours of admittance, and a directional arrow. This was the only effort to identify the site during the period of development.

Today, interpretation is essential to convey to the public an understanding of the history and design of the garden. Interpretive materials should emphasize the park's special character, stressing its inherent relationship to Dumbarton Oaks Gardens and the original Dumbarton Oaks estate. National Park Service sites typically rely on "waysides" for interpretation – permanent signs large enough to present explanatory text that are accompanied by photographs or diagrams. Multiple waysides can be an effective means of telling a complicated story, but would be an obtrusive and inappropriate addition within Dumbarton Oaks Park, as Farrand originally designed it to be a private garden rather than a typical public park. Reinstallation of the two entrances signs in 1999, reflect the original design and once again define the original entrance to the Dumbarton Oaks Park. The National Park Service offers a self-guided cell phone tour and seasonal park ranger-led tours to provide an overview of the park resources.

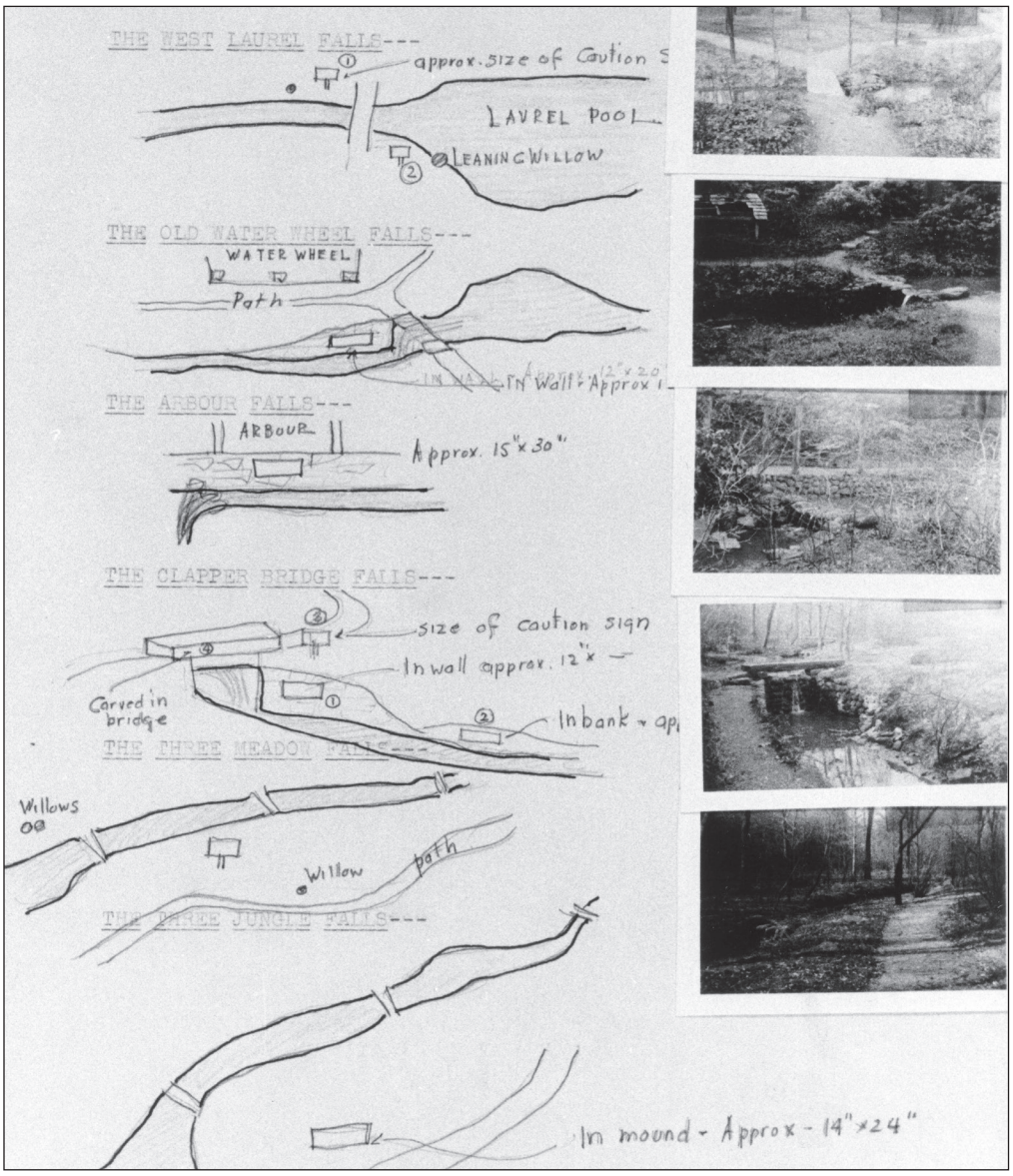
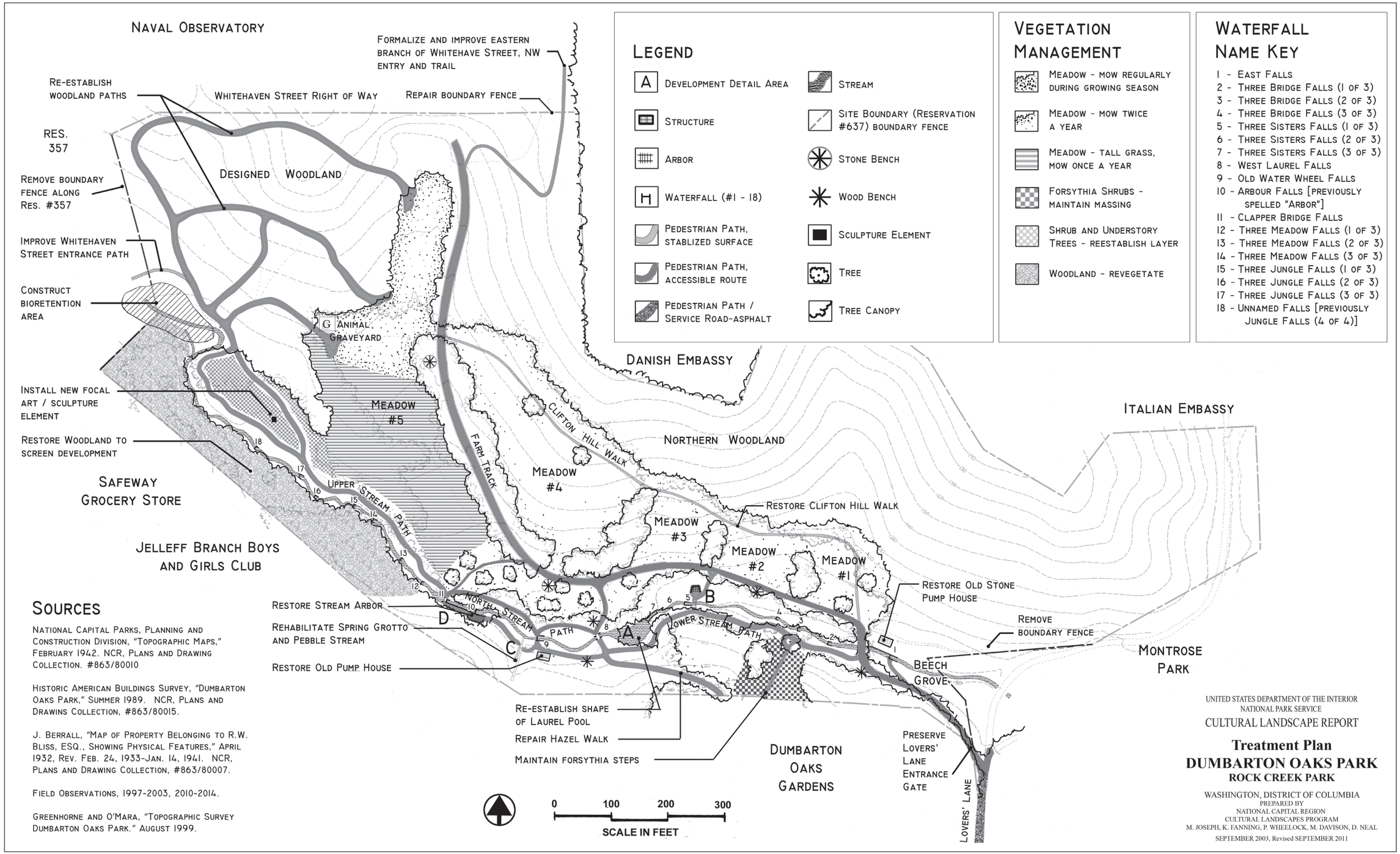


Figure 3.2 Beatrix Farrand's suggested type and location for place name signs prior to the public opening of the park in April 1941, December 1940 (DOSLA Photo Archive, #13.50).

Recommend Treatment Actions:

- Develop an interpretive program for Dumbarton Oaks Park that includes site brochures, expanded seasonal guided walking tours, a limited number of waysides outside of the park entrances, and entrance signs for the two Whitehaven Street, NW spur paths.
- Develop a brochure or utilize other media for self-guided walking tours of the site.
- Develop a brochure or utilize other media to describe the on-going restoration work and provide updates on a seasonal basis.
- Develop an interpretive wayside with a site map and brief overview of Dumbarton Oaks Park to orient visitors to the site. Install waysides outside the park, by the Lovers' Lane Entrance gate and at the west and northeast entrances from Whitehaven Street, NW. Other waysides may be needed at Lovers' Lane Entrance and on R Street, NW to orient visitors to the park. If brochures (site bulletins) are used, install brochure holders at each entrance location.



Map 3.1 Treatment Plan for Dumbarton Oaks Park (CLP September 2003).

Landscape Character Areas

Lovers' Lane

Ownership

The Lovers' Lane corridor serves as the main entrance to Dumbarton Oaks Park. It consists of a central asphalt road, flanked on the east by a low stone wall along NPS-managed Montrose Park, and on the west by a high stone retaining wall with a drainage channel at its base, which is the eastern boundary of Dumbarton Oaks Gardens. In 2008, the District of Columbia transferred ownership of Lovers' Lane to the National Park Service – extending from the top of R Street, NW down the hill to the stream including the low stone wall on the eastern boundary and stone gutter along the west side of the lane.[6] At R Street, NW, a NPS vehicle barrier gate blocks public vehicular access down the road. Although not yet substantiated, Farrand may have designed the drainage channel along the west side of the lane. There are various utility easements within or along this road corridor.[7]

Recommended Treatment Actions:

- Ensure that this corridor continues to serve as the primary entrance of Dumbarton Oaks Park and that the design details are properly managed by the adjoining property owners, NPS and Dumbarton Oaks Gardens, as part of the preservation of the overall Dumbarton Oaks design.
- Evaluate the flow of stormwater down Lovers' Lane from the R Street, NW intersection to the stream, determine how to reduce the flow, and develop

Figure 3.3 The Lovers Lane corridor should be improved to restore its historic cobble surface and other important structural features (NCR 2013).

strategies to prevent further damage to the high stone retaining wall, roadway, and drainage channel.

- Conduct a rights-of-way inventory for the corridor to verify size, type, location and jurisdiction for all easements (utility, property rights-of-way, etc.).

Circulation

Lovers' Lane has served as the official entrance to Dumbarton Oaks Park since 1941. Other entrances to the park were developed from Whitehaven Street, NW in the 1970s and 1980s. Because of the steep grade of Lovers' Lane, the park has been virtually inaccessible to the physically challenged visitor. To improve the road surface, the lane was recently repaved. This extra layer of asphalt increased the road elevation and covered remnants of the historic cobble surface. It also exacerbated the stormwater flows down the road surface where sections of the road have become undermined by the water directed to the drainage channel located two to three feet lower than the new pavement surface.

Recommended Treatment Actions:

- Maintain Lovers' Lane as the main entrance to Dumbarton Oaks Park. (The western and northeastern Whitehaven Street, NW entrances will serve as secondary entrances. See *Designed Woodland – Circulation* and *Northern Woodland – Circulation*)
- Lower the road to its historic 1920s grade and restore its cobbled surface. This may improve the overall drainage patterns and stabilize the road surface.

Vegetation

Trees along the Lovers' Lane edges of Dumbarton Oaks Gardens and Montrose Park form a canopy over the corridor from R Street, NW to the main park gate at the Beech Grove entrance. To the west, there is a high stone retaining wall along Dumbarton Oaks Gardens, and a drainage channel at its base parallel the road. English ivy (Hedra helix) drapes over the high wall and vegetative debris often clogs the water channel, causing stormwater to be redirected out of the channel, thus undermining the roadway and threatening the stability of the wall. On the east, a low stone wall parallels the road from near R Street, NW to the bottom of the hill. Along this wall grows a mature hedgerow of Osage orange (Maclura pomifera), mulberry (Morus alba) trees, and other scrubby understory vegetation.

Recommended Treatment Action:

- Preserve the historic arching tree canopy along the east stone wall by pruning trees and removing scrubby invasive understory vegetation as recommended by the *Montrose Park Cultural Landscape Report* (2004).
- Coordinate management of the vegetation growing on and over the west retaining wall with the Dumbarton Oaks Garden staff.

- On a routine schedule, remove vegetative debris within the Lovers' Lane drainage channel to maintain an open channel for stormwater to flow.

Structures

The high retaining wall of Dumbarton Oaks Gardens on the west and the low stone wall of Montrose Park on the east provide the visual boundaries for the Lovers' Lane corridor. Both walls are in varying condition. Excessive stormwater runoff from R Street, NW and the lane has endangered the Dumbarton Oaks Gardens retaining wall. Stones from the low stone wall have been dislodged or removed entirely from the park. Until 2008, this wall was owned by the District of Columbia as part of the road right-of-way.

Recommended Treatment Actions:

- Restore the low stone wall. Repoint and replace the capstones as recommended by the *Montrose Park Cultural Landscape Report* (2004). Provide a gap or stile over the wall to provide access from Montrose Park. This effort would be coordinated with the circulation plan for Montrose Park.
- Coordinate with the District of Columbia to reduce flows from R Street, NW down the Lovers' Lane corridor to prevent the stormwater runoff from undermining the high retaining wall or further damaging the drainage channel.

Small-Scale Features

When Dumbarton Oaks Park opened to the public in the 1940s, the NPS installed a wooden entrance sign at the intersection of R Street, NW and Lovers' Lane to directed visitors down the lane to the entrance of Dumbarton Oaks Park. At some point this sign was removed, but in 1999 a replica was reinstalled in its current location. (See Overall Site – Interpretation for description of entrance sign.) The NPS-installed barrier gate to prevent vehicle access down the lane is still in place.

Along the west side of the lane, a drainage channel, which may have been designed by Farrand, carries stormwater from R Street, NW down the hill. The overlapping stone slabs were designed to direct water into a culvert that empties out into the stream branch that runs through the valley to Rock Creek. Over the years, the cobbled surface of Lovers' Lane was raised by adding layers of asphalt paving, adversely affecting the drainage patterns and causing the road, drainage channel and retaining wall to be damaged by the excessive stormwater.

Recommended Treatment Actions:

Fences and Gates

- Remove the existing barrier gate at R Street, NW. Design and install an aesthetically pleasing movable vehicle barrier that is compatible with the historic period and provides an inviting entry for pedestrians.

Signs

- Install an interpretive wayside and an interpretive brochure holder near the entrance sign.

Drainage

- Maintain the channel that runs along the western edge of Lovers' Lane. This includes the band of round river stones paralleling the side of the channel, and the stone slabs, which were laid end-to-end, separated by stone rills. Integrate green infrastructure practices for stormwater management while preserving the historic drainage channel.

Figure 3.4 Mature American beech trees arch over the wide path leading into the park. A Farrand era stone retaining wall, defines the southern edge (NCR 2009).

Figure 3.5 This view of East Bridge Falls is the first of 18 waterfalls along the unnamed stream within Dumbarton Oaks Park. The Beech Grove path and farm track continues across the vine covered Stone Bridge, April 12, 1961 (Museum Resource Center [MRCE] Photo Archive, #7814-G).

Lovers' Lane Entrance and Beech Grove

Circulation

The entrance path leading from the old entry gate through the Beech Grove to the stone bridge follows the route of an old farm road. The path is flanked by a stone retaining wall on the southern uphill side. When this broad path reaches the stone bridge, visitors can choose one of two routes: the stream path, which leads west, or the farm track, which goes northwest over the bridge across the stream. A third route, the iris path, which connected the grove with the upper gardens, was abandoned in the 1940s, but subsequent hillside erosion, exposed the concrete base where stones were probably inset. (See *Southern Slope – Circulation* for treatment recommendations.) Just east of the stone bridge, another path descends to the stream via a short flight of steps constructed of railroad ties and edged with stones. At the bottom of the steps, there is a paved flagstone platform for viewing the East Falls and the profile of the stone bridge. The platform and railroad steps appear to be a later NPS addition to the park.

The entrance path has widened considerably over time, losing its original sweeping curves and definition, because of uncontrolled vehicular and pedestrian use. The steps down to the East Falls and flagstone platform remain, but they, too, have deteriorated and the slope is severely eroded.

Recommended Treatment Actions:

- Restore the Beech Grove path to its original curvilinear alignment and narrower width. A few extant edge stones will guide the redefinition of the path.
- Remove the deteriorated railroad tie steps leading to the East Falls and reassess whether this access route is needed.
- Rehabilitate the undermined portions of the flagstone viewing platform beside the East Falls and stabilize the bank.
- Provide an accessible route using the Beech Grove path and the farm track (See *Overall Site* recommendations for *Circulation*.)

Vegetation

Historically, the key vegetative elements in this area were the American beech (*Fagus grandifolia*) growing along the farm track and masses of mountain laurel (*Kalmia latifolia*) located above the stone retaining wall and along the streambank. Vines cascaded over the retaining wall, softening the appearance of the round stones. In the spring, bulbs and perennials, planted in drifts along the path, added color and interest to the corridor.

Over time, most of the mountain laurel died, leaving only a few shrubs above the retaining wall on the Dumbarton Oaks Gardens side of the fence. Non-native, invasive deciduous shrubs have filled in the areas where the mountain

laurel previously grew along the streambank, creating a more seasonally open understory. A variety of spring-flowering bulbs and perennials from Farrand's design still remain along path, beneath the beech trees. Although the signature beech trees are in a state of decline, the historic character of the vegetation is still evident.

Recommended Treatment Actions:

- Maintain the historic tree canopy of American beeches and other historic plantings that remain and restore them where declining, missing or lost to retain the character of the grove.
- Develop a *Planting Plan* for the restoration of the Beech Grove that includes the beech trees, massing of native shrubs (including some mountain laurel, to confirm if they can withstand current growing conditions), woody vines, and drifts of herbaceous plants and bulbs. (See *Appendix* for consolidated plant list, prepared from CLR *Part 1* and *Record of Treatment* for the 2013-2014 "Beech Grove Signature Project" and approved plant list.)
- Allow the woody vines to cascade over the retaining wall to soften its appearance.
- Remove non-contributing and non-native, invasive vegetation in the tree, shrub and ground cover layers using guidelines defined in the *Planting Plan*. (See *Overall Site – Vegetation*.)

Structures

The Lovers' Lane Entrance gate has served as the main entrance to Dumbarton Oaks Park since the 1940s. Because the opening hours were originally restricted (seasonally and hourly), the NPS secured the entrance when the park was closed. The historic entry through the main wooden gate, was supported by two tall stone piers, was closed most of the time, so visitors entered through a gate in the chain-link fence located immediately adjacent to the right pier (north). After the NPS lifted the restricted hours, the wooden gate was kept open and the chain-link gate became obsolete. Records indicate that the wooden gate has been replaced at least three times, but the hardware is probably original. Recently, the free-standing pier was stabilized and the capstone reset. The other structure in this area is a retaining wall, constructed of large round stones, along the southern side of the Beech Grove path.

Recommended Treatment Actions:

- Maintain the wooden gates, hardware, and stone piers in working order.
- Maintain the stone piers to allow the gate to function properly.
- Keep the wooden gates open to indicate that this is the main entrance for all visitors to Dumbarton Oaks Park. By keeping the gate open, visitors will be drawn into the park's historic landscape.
- Stabilize the stone retaining wall along the Beech Grove corridor and reset loose stones that have become dislodged by fallen trees.

Small-Scale Features

When Dumbarton Oaks Park opened as a public park in 1941, the National Park Service also installed an entrance sign at the Lovers' Lane Entrance gate by 1945. The sign was identical to the one placed at the top of Lovers' Lane where it intersected with R Street, NW. (See *Overall Site – Interpretation*, for description of the entrance sign.) Two other sign types, a wood routed sign and a metal sign, were installed in subsequent years. For many years, only a wooden post from an earlier entrance sign and some regulatory signs marked the entrance into the park, until a replica of the historic entrance sign was installed in 1999.

Recommended Treatment Actions:

Signs

- Install a wayside just outside the Lovers' Lane Entrance gate to orient the public and provide a brief narrative about the design.
- Coordinate the placement of all signs near the entrance to avoid visual clutter in the overall landscape, especially within view of the open gates.

Site Furniture

- Locate one neutral-color trash receptacle near the Lovers' Lane Entrance gate in an inconspicuous location.

Southern Slope

Circulation

Four paths descended from the upper gardens to the lower stream valley: the iris path, Forsythia Steps, Hazel Walk and the stepping-stone path. Their individual character ranged from the more formal passageway of the Forsythia Steps to the utilitarian stepping-stone path along the pebble stream. When the upper gardens and valley gardens were sub-divided in the land transfer of the 1940s, a chain link fence was installed to separate the properties. The iris path and the stepping-stone path connections were abandoned at this time. The Forsythia Arch gate and a wooden gate in the boundary fence at the top of Hazel Walk continued to be utilized until the late 1960s when both gates were closed by Dumbarton Oaks Gardens for security reasons. Once these gated connections were sealed and closed off, the paths no longer were maintained by the National Park Service.

Iris Path – The iris path led from a grove of cherry trees in the upper gardens down a steep slope to the main path at the stone bridge where the Beech Grove wall ends. It consisted of irregularly cleft stepping stones and was bordered by clumps of irises. The path was abandoned after the division of the estate in the 1940s. Subsequent hillside erosion has exposed the concrete base where stones were probably inset.

Recommended Treatment Action:

- Abandon the iris path, since its complete restoration would only be possible if the boundary fence between Dumbarton Oaks and Dumbarton Oaks Gardens were removed. In any case, stabilize the slope to protect remnants of the concrete base

Forsythia Steps – As originally designed, the Forsythia Steps are part of a stone path that descends the south-facing hillside, which is planted with a mass of forsythia shrubs. The path extends from the upper gardens through the Forsythia Arch and Gate and down the hill to the stream path. The arch was constructed at the midpoint on the slope where the grade drops sharply, necessitating the use of this distinctive flight of flagstone steps to complete the descent. At the base of the steps, the path split in two to pass around a double-trunked sycamore tree before it intersected with the stream path. The hard-packed earthen path to the west was edged with river stones and was designed to be similar in appearance to the stream path. The path on the east consisted of stepping-stones. The Forsythia Steps were used continually as a connection between the upper and lower gardens until the late 1960s, when the gate was removed and the archway sealed with stone and mortar. At this same time, several steps were removed on the garden side of the gate and the route was redirected to connect to an internal garden loop, severing this connection with the valley

Figure 3.6 Iconic view of Forsythia Hill during the early years of the park, March 23, 1945 (ROCR Photo Archive, #431-A).

Figure 3.7 Spring view of restored and stabilized design elements for Forsythia Hill (NCR 2012).

garden. Over time, various stones for the lower portion of the Forsythia Steps settled or became dislodged. Walking on the steps was precarious until the steps were stabilized in 2000 by the National Park Service. Also in 2000 Dumbarton Oaks Gardens unsealed the archway between the garden and park and restore the original iron gate. They also reinstalled the steps that were removed when the gate was sealed, to restore the physical continuity of the Forsythia Steps. The two paths at the base of the stairs retain most of their historic character, but the western path was modified slightly when a new drain line from Dumbarton Oaks Gardens was installed.

Recommended Treatment Actions:

- Coordinate with Dumbarton Oaks Gardens to open the gate on special occasions when security can be provided, so visitors can once again use this flight of steps to experience the progression of Farrand's design between the upper gardens and valley.
- Preserve the stabilized Forsythia Steps and protect them as part of cyclic maintenance.
- Preserve the two paths located between the base of the steps and the stream path and continue to clear the vegetation around the stepping-stones to keep them more visible. Restore the edge stones in their original locations along the western path and resurface it with a material compatible with the historic character of the original stream path.

Hazel Walk – This path is located to the south of the Laurel Pool. The Hazel Walk branches off from a similar path in the upper gardens and continues through an area where a grove of hazel trees once arched over the walk. It continues down the slope to the south stream path. The walk's surface originally consisted of flagstones laid in two parallel tracks, with wood mulch placed in between. This path was used until the late 1960s. All the stones of the Hazel Walk remain, although some have shifted or been displaced by tree roots. En-

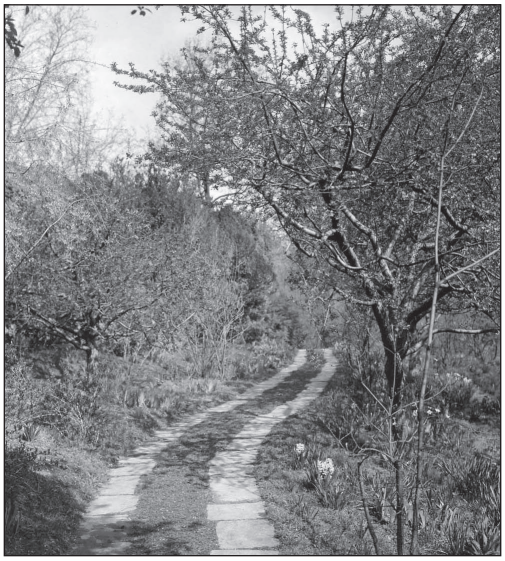


Figure 3.8 Historic view of garden path similar to the Hazel Walk, 1929-1932 (DOSLA Photo Archive 302. AR.LA.GP.XX.09).

Figure 3.9 Remnant flagstone tracks leading up the hill from the south stream path (NCR 2012).

croaching vegetation, however, must be periodically removed to prevent it from obscuring the walk.

Recommended Treatment Action:

- Remove any vegetation covering the flagstone track surface of the Hazel Walk and keep the walk clear to enable visitors to see the feature from the south stream path.
- Reset any displaced stones and stabilize the area between the stone tracks because of the steepness of the slope. (Note: In the upper gardens the space between the flagstone tracks is now paved with exposed aggregate concrete.)
- Reinstall an appropriate gate at the top of Hazel Walk and coordinate with Dumbarton Oaks Gardens to open the gate on special occasions when security can be provided, so visitors can once again use the connecting path and experience the progression of Farrand's design between the upper gardens and valley.

Stepping-Stone Path – A path of stepping-stones used to run directly from the greenhouse area in the upper gardens to a culvert head wall located near the boundary line between the two properties. Below this point, the path met and ran parallel to the pebble stream until it intersected with the south stream path.

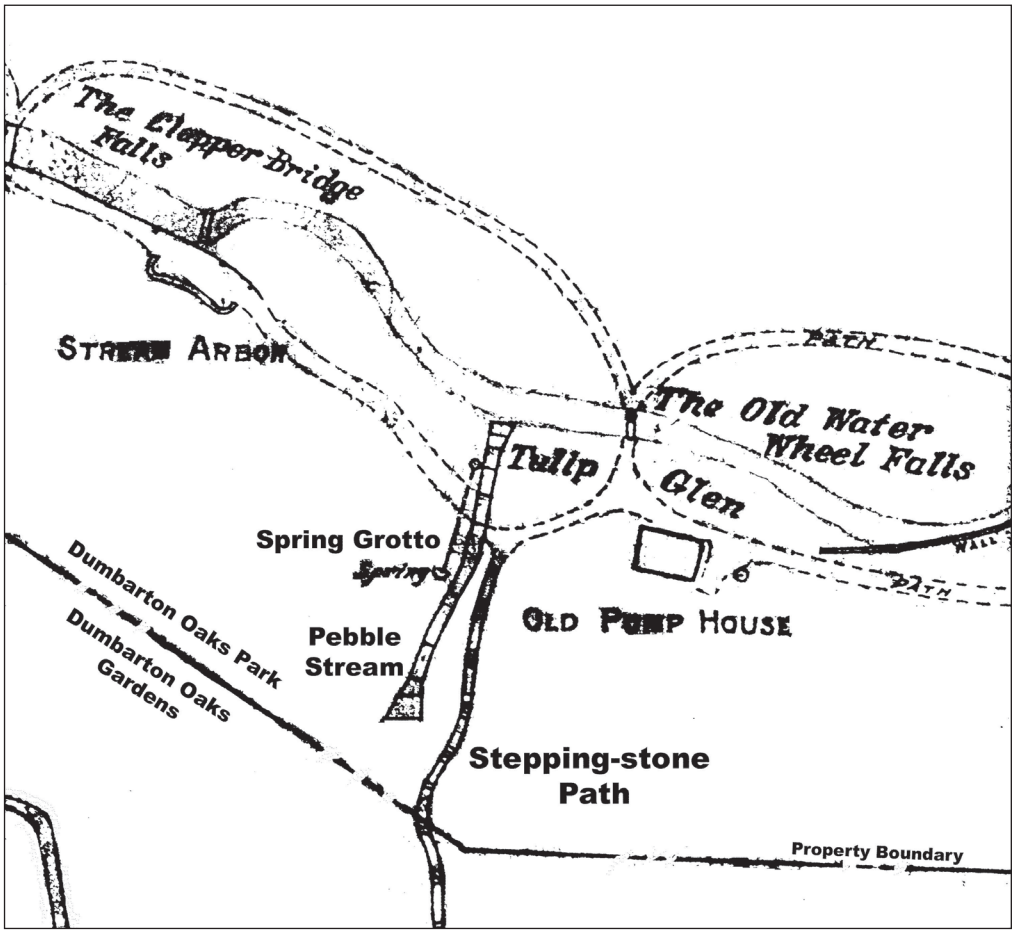


Figure 3.10 Annotated 1932 Berrall map showing the location of the stepping-stone path along the pebble stream (NCR Technical Information Center [TIC] 863/80007).

(See *Stream Valley – Structures* for further description of the pebble stream and culvert head wall.) The Dumbarton Oaks Gardens staff used the stepping-stone path as a route to a spring located just below the culvert headwall where they collected spring water. This utilitarian path was removed in 1942 after the property was divided and the boundary fence was erected, essentially blocking that old route. Since then, visitors use the slippery and eroded pebble stream to gain access up the hill to view the culvert and other features associated with the spring.

Recommended Treatment Action:

- Restore the stepping-stone path in its approximate original location on the park side of the boundary fence to provide a safe walking path for viewing the upper portion of the pebble stream. (See *Spring Grotto & Pebble Stream* Development Detail C.)

Vegetation

The southern slope incorporates different types of vegetation that provide seasonal color, texture, and scale to the overall design. Some vegetation framed or accented the paths that connected the upper gardens to the naturalistic garden. In other areas, shrub massings were used as a backdrop or screen for views from the stream path below. The historic plantations of shrubs and the tree canopy have lost much of their original character, and these losses have affected the definition, organization, and relationships of the open and enclosed spaces, as well as the circulation, views and vistas. To reclaim one of the original plantations, in 1999 rooted cuttings from the original forsythia shrubs in Dumbarton Oaks Gardens were replanted on the hillside to restore the shrub massing down the slope into the valley garden. Over the last ten years, the NPS and volunteer crews have targeted removal of non-native, invasive vegetation on the southern slope, but the forsythia shrubs continue to compete with aggressive vines and other non-native, invasive vegetation.

Recommended Treatment Actions – Overall:

- Develop a Planting Plan for the restoration of the southern slope that includes the replacement of the canopy trees, sentinel trees, shrub massings, and drifts of herbaceous plants and bulbs along the slope and connecting paths. The plan would be based on what we know of Farrand's original design intent for six different vegetative areas: 1) the bridge hollow; 2) Forsythia Hill; 3) the southern slope meadow; 4) Hazel Walk; 5) the rhododendron plantation; and 6) the bamboo plantation and western boundary. (See *Appendix* for consolidated plant list, prepared from CLR *Part 1* and updated plant survey, regarding plant selection on the *Southern Slope* for each vegetation area.)
- • Continue to remove non-contributing and invasive vegetation in tree, shrub, and groundcover layers to restore the original spatial relationships

and recreate historic views. Refer to the *Planting Plan* to determine what plants to remove and how they should be removed.

Bridge Hollow – A ravine between the western end of the Beech Grove retaining wall and the eastern side of the Forsythia Hill area, the bridge hollow included a mix of azaleas, rhododendrons and herbaceous plantings planted on the steep slopes. Farrand retained specimen trees to give maturity to the design and added shrubs and swaths of groundcover to the understory to complement the woodland habitat.

Severe erosion from runoff originating from the upper gardens has compromised the Farrand-era planting. Non-native, invasive growth dominates the understory.

Recommended Treatment Actions – Bridge Hollow:

- Develop a *Planting Plan* for the bridge hollow where it would focus on replacement of the missing canopy and sentinel trees and the reestablishment of shrub massings, ground covers, and drifts of herbaceous plants and bulbs. (See *Appendix* for consolidated plant list, prepared from CLR *Part 1* and *Record of Treatment* for the 2013-2014 "Beech Grove Signature project" and approved plant list.)

Forsythia Hill – A planting of showy forsythia swept down slope on both sides of the Forsythia Steps, extending as far as the ravine on the east and the edge of the southern slope meadow to the west. A distinctive double sycamore at the bottom of the steps accentuated the junction with the south stream path.

Over the years the forsythia within the park declined and was not maintained. To restore this signature Farrand design feature, in 1999 the NPS replanted four-year old cuttings, taken from the healthy forsythia massing in the upper gardens.

Recommended Treatment Actions – Forsythia Hill:

- Maintain the existing mass of forsythia by pruning annually after spring bloom to promote showy, robust flowering.
- To preserve the original genetic stock, continue to propagate rooted cuttings from the existing forsythia, and interplant them to fill the gaps as needed.

Southern Slope Meadow – A grassy meadow planted with daffodils extended down the southern slope between the Forsythia Hill and Hazel Walk area. The open area allowed open views from the upper gardens into the stream valley. Originally, before the construction of the boundary fence, this meadow appears to be a continuation of a grassy area Fair View Hill, in the upper gardens.

Over the years, the non-native, invasive vegetation encroached on the open area and vines covered the boundary fence. The unmanaged vegetative growth has

Figure 3.11 Southern slope meadow serves as a transition space between the forsythia shrub planting and the mountain laurels planting on the slope above the Laurel Pool, c. 1935 (DOSLA Photo Archive #267.AR.LA. GP.13.25).

blocked reciprocal views between the upper and lower gardens. Recent efforts by the NPS and partners have removed the invasive shrub layer, but a thick layer of invasive vines still covers the ground plane.

Recommended Treatment Actions – Southern Slope Meadow:

- Restore the slope between the Forsythia Steps and Hazel Walk to its historic meadow-like appearance. Mow annually to maintain the height of the plant growth, to visually link it to the adjacent meadow on Fair View Hill in the upper gardens. (See *Appendix* for meadow management guidelines.)

Hazel Walk – Farrand designed a grove of mature hazel trees arched over the walkway that lead down the southern slope from the upper gardens. The lower section of the Hazel Walk was a shrub mass planting of mountain laurels interspersed with native lindens, tulip poplars, and sassafras, forming a mature tree canopy. A line of tulip poplars continued down the slope and across the walk, where they guided the view from the end of the North Vista to the valley.

Since the Hazel Walk was abandoned, the area has not been maintained. All the hazel trees have died and only a few mountain laurels and a one sassafras tree remain on the hillside. Non-native, invasive vegetation dominates the groundcover and understory. A group of drooping leucothoe is located on the slope above the Laurel Pool area, perhaps a substitute for the mountain laurel that failed. Even with all the invasives, a wide variety of spring flowering bulbs and perennial plants still exist in the area.

Figure 3.12 View from top of Hazel Walk looking over mountain laurel planting to the Laurel Pool and West Laurel Falls bridge crossing, c. 1935 (DOSLA Photo Archive #255.AR.LA.GP.13.23).

Recommended Treatment Actions – Hazel Walk:

- Reestablish the hazel trees (*Corylus americana*), planted along the Hazel Walk as the signature plant for this area.

Rhododendron Plantation – Identified on a 1932 map as the "Tulip Glen," because of the high percentage of tulip poplars, Farrand planted a mass of white rosebay rhododendron (*Rhododendron maximum*) to form a backdrop for the stream planting and enclosed the Spring Grotto and Stream Arbor areas. English ivy was planted as a groundcover to create a uniform ground plane between the drifts of perennials and bulbs along the stream path.

The rhododendrons now range in height from eight to twelve feet. In some areas they have spread beyond their original boundaries, narrowing the access for the stream path and blocking views of the spring grotto area.

Recommended Treatment Actions – Rhododendron Plantation:

- Selectively prune old leggy rhododendrons to maintain their shape and desired massing as defined by the *Planting Plan* for the area.
- Consider promoting "layering" of the existing rhododendron plantation to fill in the gaps of the planting mass instead of planting new plants, to maintain the genetics of the original planting.[8]
- Prune back the rhododendron's within the spring grotto and pebble stream area to the open views to the feature from the stream path. To emphasize

Figure 3.13 The southern slope rhododendron plantation served as a backdrop for the various garden rooms along the south stream path, March 23, 1945 (ROCR Photo Archives, #431-E).

Figure 3.14 The original rhododendron are now overgrown obscuring garden features and blocking the pathways (Photo courtesy of Enclosuretakerefuge.com, 2011. https://enclosuretakerefuge.files.wordpress.com/2011/07/img_0476.jpg).

the scale of the grotto, the rhododendron massing to the east of the pebble stream should be managed at a four-foot height, while to the west of the grotto the shrub massing should be allowed to grow to about ten feet.

Bamboo Plantation and Western Boundary – The steep slope running from Clapper Bridge Falls up to the western boundary was disturbed land. It appears Farrand allowed the area to naturally succeed into a woodland edge to form a screen between the stream valley and a former dumpsite located along Wisconsin Avenue. A mass of bamboo was added at the base of the slope to accent the immature native woodland.

Unchecked and rampant non-native, invasive vine and shrub growth has decimated any remnant of a woodland habitat and now covers the area in a thick massing. Instead of screening along the western boundary, there are now clear views of the adjacent intrusive development. The bamboo plantation has also encroached further up the slope and on the north side of the stream.

Recommended Treatment Actions – Bamboo Plantation and Western Boundary:

- Remove all non-native, invasive vegetation (except bamboo see proceeding treatment action) from the southern slope area between the Clapper Bridge Falls and the southwest boundary fence. Follow contemporary standards for removal of non-native, invasive plants in coordination with Rock Creek Park staff.
- Prepare a management strategy to contain the existing historic grove of bamboo. This may involve limited removal, thinning, and containment barriers and/or root pruning around the perimeter of the bamboo plantation. Although bamboo is considered a non-native, invasive plant, this strategy will contain the plantation within this desired area of the park.
- Include in the *Planting Plan* recommendations for reforestation for the area on the southern slope between the Clapper Bridge Falls and the southwest boundary fence, based on historic plant composition. (See *Appendix* for recommended reforestation guidelines.) Where installed, these plantings will create a visual buffer between the park and the post-1951 development along upper Wisconsin Avenue (Jelleff, Safeway, etc.). Consider modifications of the slope to incorporate stormwater capture / infiltration terraces at multiple levels down the slope before reforestation efforts. (See *Overall Site – Stormwater* for green infrastructure/low impact development practices practice recommendations for park.)

Structures

The southern slope has only one structural feature, the Forsythia Arch, which historically framed and supported the Forsythia Gate. The arch was situated at the top of Forsythia Steps, prominently marking the main pedestrian passageway through the boundary fence that separated Dumbarton Oaks Gardens and Dumbarton Oaks Park. The arch was made of limestone veneer over what was

Figure 3.15 Bamboo plantation is expanding beyond its original planting and taking hold on north side of stream as seen in view upstream from Clapper Bridge Falls (Photo courtesy of Enclosuretakerefuge.com, 2011. http://enclosuretakerefuge.files.wordpress.com/2011/07/img_0486.jpg).

Figure 3.16 The western boundary is covered with rampant non-native invasive vine and shrub growth that decimated the woodland. Replanting the area with a native woodland again will eventually screen the intrusive development (NCR 2013).

probably a brick core, with inscriptions on the pediment: "Dumbarton Oaks" on the north face and "Dumbarton Oaks Park" on the south. The arch contained an iron gate ornamented with the initials of Robert Woods Bliss and Mildred Bliss. Visitors were permitted to walk through the archway from one property to the other until the 1960s, when the gate was removed and Forsythia Arch was filled with mortared rubble stone.[9] In 2004 Dumbarton Oaks Gardens stabilized the Forsythia Arch, removed the rubble stone in the archway and reinstalled the original restored gate in the archway opening. The restoration of this gate renewed the design emphasis to one of the most important vistas between the two sites, providing both visual and physical connections.

Figure 3.17 Detail of restored Forsythia Gate, linked monograms of Robert Woods Bliss and Mildred Bliss, within archway (NCR 2002).

Recommended Treatment Actions:

- In cooperation with Dumbarton Oaks Gardens, preserve and protect the Forsythia Arch and Gate and continue to open it for special events.

Small-Scale Features

Since 1940, a chain-link fence has delineated the boundary separating Dumbarton Oaks Gardens and Dumbarton Oaks Park. Two gates provided access points between the properties – one at the top of Hazel Walk and the other through the Forsythia Arch. (See *Southern Slope – Structures* for further information about the gate in Forsythia Arch.) In the 1960s the gates were removed because of security concerns at Dumbarton Oaks Gardens and then more than thirty years later, the Forsythia Arch gate was reinstalled. Vines covered the rusted fence in most areas, obscuring the boundary as well as blocking the views from the upper gardens to the valley below. In 2010 Dumbarton Oaks Gardens installed a new black vinyl-clad wire mesh boundary fence. When the original fence was removed and replaced, all the vegetative growth was pruned back.

Recommended Treatment Actions:

- Remove vegetation growing on the fence between the upper and lower gardens on a continuing basis.

Stream Valley

Circulation

The circulation system along both sides of the stream was a vital part of the intended experience of the valley garden. As part of the outward journey, the stream path led visitors through a series of rooms. The character of the path gradually changed as it ran from east to west. There were two main portions of the stream path system, the lower and upper. The section of lower stream path that followed the south side of the stream had a more formal character with well-defined outdoor rooms laid out along it. Farrand used round river stones to edge this portion of the lower path. There were also paths located on the north side of the stream. One that meandered along the valley floor was considered a part of a lower stream path loop. The other path on the north side was the upper stream path, which followed the northwest side of the stream. Its design was simple, with no stone-defined edges. Four crossing points over the stream connected the lower and upper paths. Rustic split-log bridges were used for three of the crossing points, while a ford served as the crossing for the fourth.

The stream path system has suffered over the years from water damage, visitor use, and neglect. Excessive water in the stream channel has periodically washed out portions of the path, making it unsafe for visitors. Inappropriate visitor use, ranging from bicycles to numerous unleashed dogs, has created many social trails and worn areas along the stream corridor. Many of the original paths are obscured by groundcover vegetation, causing new routes to be worn. Most of the lower stream path on the south side is in fair condition, still visible and useable. However, almost the entire length of the north side and sections of the

Figure 3.18 Rare historic color image of garden and south stream path near stone bridge, c. 1960 (Courtesy of Penn State Libraries Collection, James DeTuerk. https://www.flickr.com/photos/psulibscollections/5804494665/in/set-72157633581451771).

upper stream path are in poor condition, with extensive scouring of the trail surface, so that the historic alignment is no longer apparent.

South Stream Path – Farrand designed a five-foot-wide gracefully curving gravel path that followed the south side of the stream from the stone bridge to the Clapper Bridge Falls. In the first section, from the stone bridge to the Laurel Pool, small round stones lined the south, or uphill, side of the path. On the streamside of the path, larger edge stones were placed more sporadically or positioned to mark a turn on the path or a point of interest, like a waterfall location. Between the Laurel Pool and the spring grotto, the path remained five feet wide, but lacked edge stones. Further upstream, large flat edge stones were placed on end to retain the steep slope on the south side of the path in the section from the spring grotto to the Stream Arbor, and then repeated along the narrower three-foot section from the arbor to Clapper Bridge Falls.

Occasionally, a short, sharp rise or natural threshold occurred at the entrance to one of the rooms, or specially designed spaces, located along the south stream path. Farrand incorporated these thresholds into her design at several locations: at the beginning of the path at the stone bridge where three steps led down, at the Laurel Pool, and at the spring grotto, where the path sloped up toward the pebble stream and grotto feature.

There were also four crossing points over the stream: at the Gray arbor memorial, the West Laurel Falls, the Old Water Wheel Falls, and the Clapper Bridge Falls. At three of the crossing points, split log footbridges crossed the stream. There was a ford across the stream at the Old Water Wheel Falls.

The south stream path has deteriorated over the years. Three sections of the path remain intact: from the base of the Forsythia Steps to the Gray arbor memorial; from the West Laurel Falls to the Old Water Wheel Falls; and from the spring grotto to the Clapper Bridge Falls. From 1999-2001, initial efforts by NPS archeologists and the Student Conservation Association (SCA), revealed previously buried edge stones and a few markers stones at key intersections near the Stone Bridge and at the base of the Forsythia Steps. The park trail crew resurfaced sections of the south stream path with a stabilizer material. For a short time this treatment proved successful, but eventually the stream breached its banks and washed off the surface material, creating rivulets down the paths, and pushed the sediment downstream, covering the edge stones once again. A wooden snow fence now marks the pathway edges in the most disturbed area between the Stone Bridge and Laurel Pool area.

By 2001, two of the rustic footbridges were reestablished by the Historic Preservation Training Center (HPTC) to provide critical connections at the Gray arbor memorial and Clapper Bridge Falls. The West Laurel Falls crossing was not reestablished because of the severe erosion at the juncture of the north stream path and footbridge crossing.

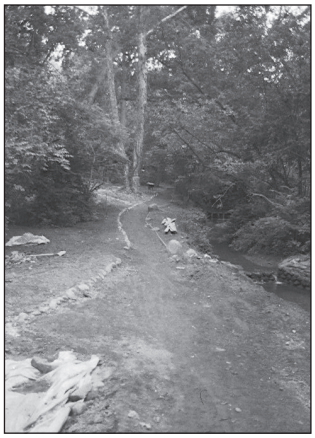


Figure 3.19 (top left and below left) In 1999-2000, NPS archeologist and SCA students located the original edging stones buried by sedimentation near the stone bridge (NCR 1999).

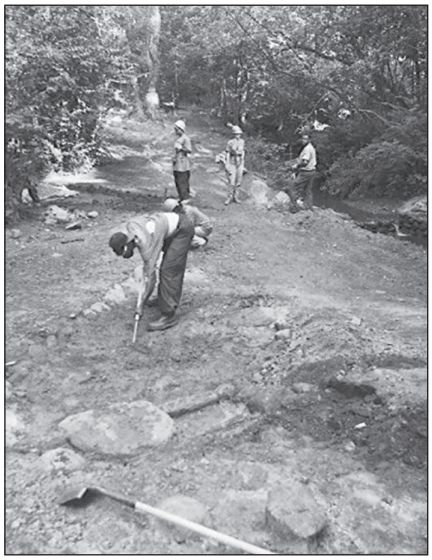


Figure 3.20 (top right and far right) The edging stones are no longer discernable and are once again covered by sedimentation (NCR 2012).

Figure 3.21 Intact portion of the south stream path between the stone bridge and Gray Arbor Memorial. The distinctive design features include the round edge stones on the uphill side, marker stones at trail intersections and a five foot wide stable surface (NCR 2005).

Figure 3.22 Original rustic log footbridge at the West Laurel Falls crossing, 1941 (MRCE Photo Archives #16.13a, CD #108).

Figure 3.23 Missing pedestrian crossing at West Laurel Falls. This can be reestablished once the drainage issues along the north stream path are corrected at this critical junction (NCR 2005).

Recommended Treatment Actions – South Stream Path:

- Reestablish where lost the historic alignment and grade of the lower south stream path. The serpentine layout and five-foot width between the stone bridge and spring grotto are important components to reestablish and maintain, as well as such historic design features as thresholds, edging stones and marker stones.
- Reestablish the historic character, appearance and alignment of the path, using a surfacing material that is compatible with the character of the original material. The selection process should also consider contemporary conditions such as frequent excessive stormwater and intensity of visitor use. The pathway surface should be overlaid on a resilient compacted base material.
- Restore or reset the path edge using round (6 – to 10-inch diameter) river stones and irregular marker stones uncovered in place or gathered on site. Install edge stones only where they were used historically.
- Reestablish thresholds, steps or grade changes, where lost: at the south end of the stone bridge, Laurel Pool, and spring grotto.
- Remove the temporary bridge over the pebble stream and design a crossing as part of the spring grotto and pebble stream restoration that is in keeping

with the character of this unique feature. Analysis of a ca.1930 photograph (DOSLA 13.21) indicates that a flat stepping stone was set into a panel of the pebble stream to provide a means of crossing the slippery surface. (See *Stream Valley – Structures – Spring Grotto – Pebble Stream* and Development Detail C for path alignment layout.)

- Reestablish where missing at the West Laurel Falls and replace where deteriorated at the Gray arbor memorial and Clapper Bridge Falls, the distinctive rustic log footbridges. (See *Stream Valley – Small-Scale Features – Pedestrian Bridges* for information about source for logs.)

North Stream Path – A five-foot-wide path constructed of bank-run gravel followed the north side of the stream through the lower stream valley. This path started at the West Laurel Falls, led to the Old Water Wheel Falls and then to the Clapper Bridge Falls. Large marker stones were sited to indicate stream crossings and path intersections, and a few edge stones were placed to line the path. A stepping-stone path connected the Gray arbor memorial to the farm track. There were no other distinguishing features defining the path.

The north stream path has changed considerably since its development. Portions of the path were resurfaced by SCA and AmeriCorps crews in 2005, but the surface material was subsequently washed away during a rain event in 2006. Sections of the historic path are still in use and heavily eroded by surface runoff channelization, while other sections have been lost due to rampant vegetative growth and lack of maintaining the trail surface although the steel edging to line the path in 2005 is visible.

Recommended Treatment Actions – North Stream Path:

- Reestablish the historic alignment and five-foot-width of the lower north stream path. The curvilinear layout is lost, but many of the original marker and edge stones still remain and the steel edging installed in 2005 can guide the work.
- Provide an accessible route along north stream path (upper and lower path) that follows ABA, Outdoor Developed Areas guidelines. An accessible connection from this path to the farm track could be established. (See *Overall – Circulation* for information on recommended accessible trail routes and see *Management Philosophy – Management Documents*, for ABA accessible pathway requirements.)
- Reestablish the historic character, appearance and alignment of the path, using a surfacing material that is compatible with the character of the original material. The selection process should also consider contemporary conditions such as frequent excessive stormwater and intensity of visitor use. The pathway surface should be overlaid on a resilient compacted base material.

Upper Stream Path – The historic character of the upper stream path was more informal than the lower stream path. The Clapper Bridge Falls crossover marks

Figure 3.24 Five-foot wide, well defined north stream path, July 17, 1963 (Photo by Abbie Rowe, MRCE Photo Archive, CD #103).

Figure 3.25 Rutted and scoured north stream path serves as a channel for runoff instead of a path for visitors (NCR 2005).

Figure 3.26 View from Clapper Bridge Falls crossing to the three Meadow Falls and the upper stream path, 1929-1932 (DOSLA Photo Archive, #301.AR.LA.GP.13.14).

the point at which the change in character occurred. From the crossover northward, the path continued in a sinuous course along the stream to the Jungle Falls (the most western waterfall in the series of 18 constructed in the stream). There, the path divided, with one section following the stream course to the southwest, and the other veered along the base of a slope to the northwest. The two paths rejoined in the designed woodland. Farrand also placed marker stones on the upper stream path to indicate the locations of waterfalls and pathway intersections.

Major sections of the upper stream path are concealed by non-native, invasive vegetative growth or the stream course has meandered and washed out sections of the path. Although the NPS reestablished the alignment of the path between Clapper Bridge Falls and the third Jungle Falls in 2005, using the original marker stones and historic photographs as a guide, subsequent storm events and the stream dynamics hamper efforts to retain this feature. The stream continues to flow over the banks causing rutting and erosion of the banks and adjacent path surface.

Recommended Treatment Actions – Upper Stream Path:

- Reestablish the loop alignment of the upper stream path. The curvilinear alignment and five-foot width of the trail, as well as historic design features, such as marker stones, are important components to restore and maintain.
- Install a new surface that is compatible with the character of the original trail, that can withstand heavy visitor use and frequent flooding, and that follows ABA, Outdoor Developed Areas guidelines. This accessible path along upper stream path links with the north stream path (see above). (See *Overall – Circulation* for information on recommended accessible trail routes

and see *Management Philosophy – Management Documents*, for ABA accessible pathway requirements.)

- Reestablish the historic character, appearance and alignment of the path, using a surfacing material that is compatible with the character of the original material. The selection process should also consider contemporary conditions such as frequent excessive stormwater and intensity of visitor use. The pathway surface should be overlaid on a resilient compacted base material.

Vegetation

The complex planting along the stream was a major design feature of the stream valley. It was characterized by the carefully planned naturalistic arrangement of trees, deciduous shrubs and herbaceous plants and flowering bulbs. Mature trees provided overhead canopy for areas of dappled light or shade. Strategically planted understory trees and shrub massings created spaces and directed views within the stream valley and into the meadows. The delicate planting along the streambanks reflected the intimate scale of the spaces. However, from the

Figure 3.27 Farrand designed a delicate balance of spring bulbs and shrubs under the existing mature trees, 1929-1932 (DOSLA Photo Archive, #253.AR.LA.GP.13.29).

beginning, the stream-side plantings have been impacted by flood-caused erosion, non-native, invasive vegetation, off-trail pedestrian use, and lack of regular maintenance. In addition, the canopy and understory shrubs have matured, creating densely shaded areas. Despite the changes, many of the hardiest plantings have survived.

Since 2000, vegetation management has focused on controlling non-native, invasive vegetation or on hazardous tree care. Park staff have coordinated extensive efforts with volunteer and student work groups to remove targeted invasive plant species and then staff have follow-up with spot treatment with NPS approved herbicide regimens. Because of this, there has only been limited planting projects (*i.e.*, Forsythia Hill replanting) to reestablish Farrand's design intent where it is lost.

Recommended Treatment Actions:

- As part of the *Planting Plan*, develop guidance in an updated version of the *Landscape Preservation Maintenance Plan* for the restoration and maintenance of vegetation in the stream valley. This portion of the *Planting Plan* would focus on replacement of the missing canopy and sentinel trees and the reestablishment of shrub massings, ground covers, and drifts of herbaceous plants and bulbs along the stream. The restoration of the plantings in the

Figure 3.28 The spring flower massing may not be as prevalent as they were historically, but they still provide the color that Farrand intended (NCR 2013).

Stream Valley would be based on Farrand's original design intent, as determined from the 1997-98 and 2013 plant surveys, any updated plant survey, and historical documentation. Historic planting would be replaced in-kind and extent when lost. (See *Appendix* for consolidated plant list, prepared from CLR *Part 1* and updated survey regarding plant selection for the *Stream Valley*.)

- Remove all non-contributing and non-native, invasive vegetation from the tree, shrub, and groundcover layers to restore the original spatial relationships and recreate historic views. Refer to the *Planting Plan* process to determine what plants to remove, and how they should be removed. (See *Overall – Vegetation* for information regarding treatment of non-native, invasive plant materials that were planted by Farrand.)
- As the name sake of this area, reestablish the mountain laurel (*Kalmia latifolia*) massing in the Laurel Pool area by planting a trial test plot to determine if it can survive in this location. Site conditions have changed since the 1940s, when it was first planted and later failed. Please refer to the *Appendix* plant survey *Stream Valley – Laurel Pool* for recommended plant substitution if the laurels die due to incompatible growing conditions for this species.

Water Features

Farrand designed a series of 18 rustic stone waterfalls, three pools, and three retaining walls along the stream to make it the principal design feature of the naturalistic garden. Farrand emphasized in 1943 to the National Park Service Landscape Architect, Harry Thompson that "the stream is in no way a really natural brook, it should have a certain Eighteenth century quality of the naturalistic."[10]

Figure 3.29 Obscured view of one of the deteriorated waterfalls (NCR 2012).

Figure 3.30 Historic view of the Jungle Falls series. Note clean out plug that is visible at the base of the waterfall, March 23, 1945 (ROCR Photo Archive, #431-D, 16.13A).

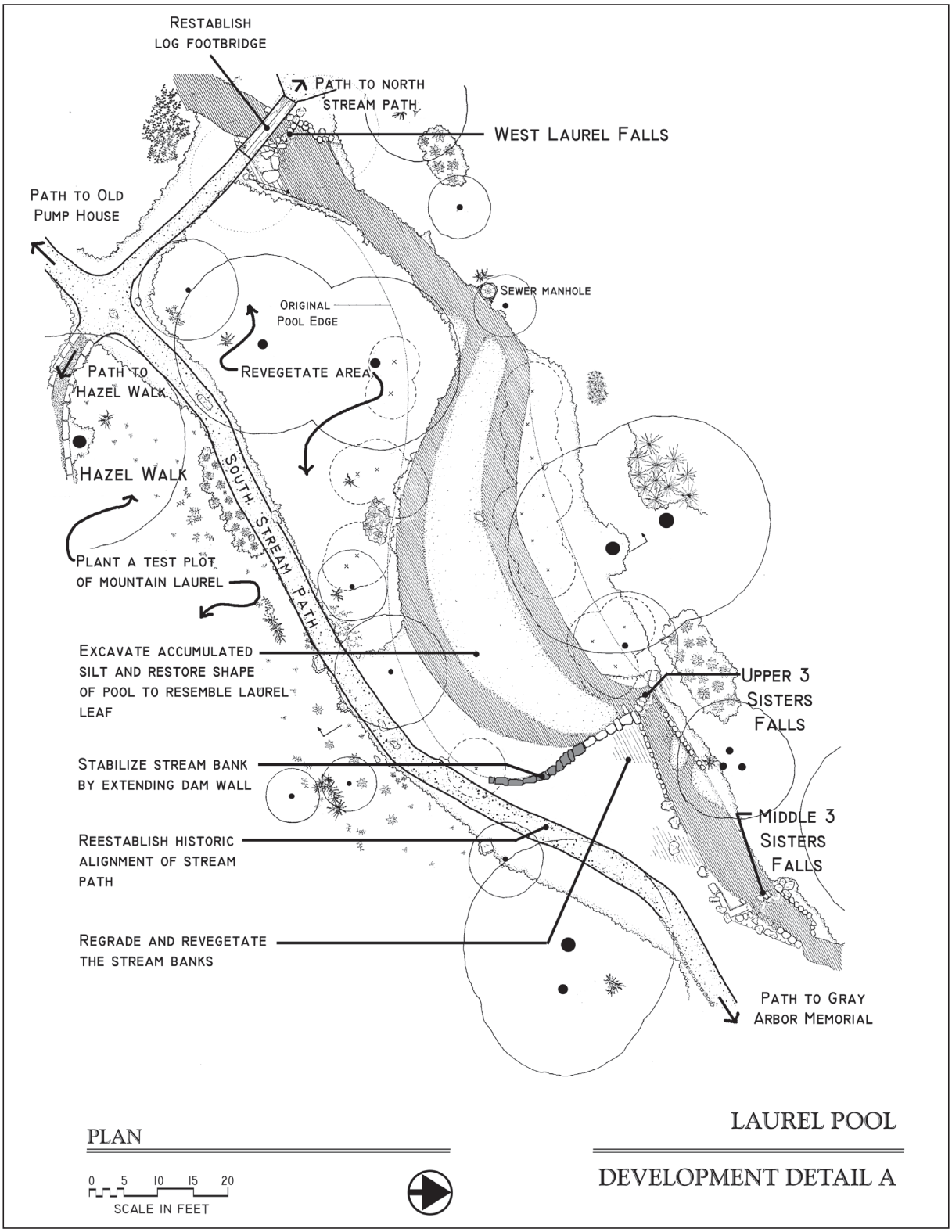
Flooding caused by stormwater, which exceeds the capacity of the stream, has contributed to the continued degradation of these water features. Some are in good condition, such as the Arbor Falls, but others have lost structural integrity or are only a remnant of their original form, such as the Meadow Falls and Jungle Falls. Eroded sediment has accumulated in the pools on the upstream side of all waterfalls and the slower flowing sections of the stream, reducing stream water storage capacity and destroying the pooling effect so critical to the overall design. Optimum water storage capacity is critical to reduce stream flow velocities and to lessen the effects of flash flooding.[11] In an attempt to protect the fragile water features, park management has focused their resources on stabilizing the streambanks and waterfalls to prevent them from deteriorating further while a long-term solution is determined and implemented.

Recommended Treatment Actions:

- Update the *Landscape Preservation Maintenance Plan* to incorporate the findings of the 2011 Hydrologic Study. Recent scholarship emphasized that the original design elements are undersized for the capacity of the stream during even minor increases of flow. Seek ways to preserve the original waterfall features while creating more volume for water in the stream channel.
- Remove sediment in-fill upstream from all dam structures to increase in-stream water storage in the pools, reduce flow velocities, and most importantly, moderate flash flooding. Initially this should be done annually, while invasive vegetation management treatment is underway and then scaled back to every three years (as recommended by Farrand) once the banks and slopes are revegetated.
- Reestablish the wooden plug clean-out device in all the dam structures. Farrand designed an ingenious system to flush the sediment from the upstream

side of the dams; at the base of each dam was a "plug," which could be removed to enable sediment to be washed through the opening.

- After a means of controlling the excess flow of water has been implemented, restore all 18 waterfalls and three retaining walls to their historic condition and appearance. Remove inappropriate waterfall "restorations" done previously in an attempt to protect the waterfall features.
- Stabilize the streambanks where they have been washed out. Regrade the banks to restore them to their historical configuration. Consider compatible design solutions (rock walls or boulders) where stream flows continue to erode the banks within the following areas: north bank of Laurel Pool and north bank between Old Water Wheel Falls and Spring Grotto.
- Reroute the stream back to its original configuration at the Islet and consider creating a bioretention holding basin located where a headwater outfall provides the base flow for the stream. The proposed bioretention area is partly within the historic boundaries of Dumbarton Oaks Park and partly on the adjacent U.S. Park Reservation 357, to take advantage of the wide floodplain by installing a weir to control outflow levels. This can potentially reduce water flow during peak stage flash floods.
- Restore the three pools, the Laurel Pool and the two other unnamed pools, located west of the Three Bridges Falls and the Clapper Bridge Falls. Each pool was intended to be "more or less like the shape of a kalmia leaf...with the deepest parts of the pool corresponding to its greatest width," the largest being the Laurel Pool.[12] (See *Laurel Pool* Development Detail A.)



Map 3.2 Laurel Pool, Development Detail A. (A NCR modified drawing based on the Dumbarton Oaks Park Historic American Building Survey [HABS] documentation, http://www.loc.gov/pictures/item/dc0640.sheet.00021a/resource/).

Structures

Farrand's design for the Dumbarton Oaks stream valley corridor was complex and more intricate than is currently apparent. In the lower section, from the stone bridge to the Clapper Bridge Falls, Farrand developed a series of rooms designed around small rustic stone structures. The spaces were less well-defined or articulated in the upper section, from the Clapper Bridge Falls northward to the Islet, where few structural features were constructed. The rustic structures were built out of local materials, wood and stone, and softened by vegetation. Over time, many structures have deteriorated or are missing important architectural elements, and, as a result, have lost their sense of enclosure and historic function.

Detail development treatment plans are provided for three of the structural features, Gray arbor, spring grotto and pebble stream, and Stream Arbor, adapted from the 1989 Historic American Buildings Survey drawing set,

Recommended Treatment Actions – Overall:

- All historic structures – the stone bridge, the Old Stone Pump House, the Gray arbor memorial, the Old Pump House, the spring grotto and pebble stream, and the Stream Arbor – should be restored to their historic appearance.

Stone Bridge – Nineteenth-century maps show a bridge at the point where the old farm track crossed the stream, west of Beech Grove providing access to the farm up the hill. The current bridge may be the original, pre-dating Farrand; Farrand's modification of an existing bridge; or entirely her design. The last scenario is the most likely possibility, since there are drawings showing four

Figure 3.31 Upstream side of Stone Bridge, 1929-1932 (DOSLA Photo Archive #249. AR.LA.GP.13.19).

different versions of the bridge in the Dumbarton Oaks Garden Library. The bridge was constructed of roughly-coursed stone with cap stones on the parapet walls, and rises in a low arch on the side elevations. Some of the capstones are dislodged on the south side.

Recommended Treatment Actions – Stone Bridge:

- Evaluate the structural integrity of the Stone Bridge and identify any required stabilization/repair work.
- Reset loose capstones on the stone bridge parapet walls, according to approved preservation maintenance standards.
- Determine the weight limits for the bridge to protect the bridge from stresses caused by possible vehicular or equipment use during restoration and on-going maintenance operations.
- Maintain for structural stability and historic appearance.

Old Stone Pump House – This structure predates Farrand's design. Its walls are constructed of large, coursed rubble stones set in mortar, and the floor is compacted bare earth, with a cedar shake shingled covered roof. The building was in poor condition when the CLR *Part 1* documented the existing conditions in 1998. Subsequent efforts by the NPS have stabilized and restored some of the character defining features. A window on the west elevation that was filled in with stones and mortar, and had a wood panel affixed to the opening, was removed by the NPS Historic Preservation Training Center (HPTC) and a more aesthetically pleasing wire mesh was installed to provide ventilation for the interior. At this same time the HPTC replaced a non-historic metal door on the east elevation with a wooden door that more closely resembled an earlier style. (See the only known image of the door from the 1960s and the *Record of Treatment* for the 2013-2014 "Beech Grove Signature Project" for the door stabilization project.) The cedar shake roof has been replaced multiple times (most recently

Figure 3.32 Repaired roof of Old Stone Pump House (NCR 2013).

Figure 3.33 Etched "87 Kiomars B." on east-facing side of the Old Stone Pump House (NCR 2013).

in 2012), typically lasting only ten years in the moist environment. A name and possible date is etched on an east-facing stone. This possible graffiti was not noted in the 1989 HABS documentation or the CLR *Part 1*, but the name is visible in a 1997 photo.

Recommended Treatment Actions – Old Stone Pump House:

- Maintain the replicated wooden door in working order. Monitor and prevent the build-up of sediment on the stone threshold to prevent the door from deteriorating. If needed, regrade and redirect stormwater from entering pump house.
- Install a more resilient wire mesh covering for the window to promote adequate ventilation for the interior.
- Repoint the masonry structure to protect from water infiltration that could compromise the structural integrity.
- If secured, use the interior of the pump house for maintenance storage.

Gray Arbor Memorial – The walls were made of coursed rubble stone set in mortar, and the rear wall was raised in the middle to accommodate a stone memorial plaque to William James Gray, Superintendent of Grounds for Dumbarton Oaks from 1922 until 1937. A wooden bench was set in front of both side walls on top of the flagstone pavers and a simple, rustic rounded wood arbor spanned the stone walls. There is no evidence that vines were ever planted to grow on the arbor structure. A stone platform and retaining wall flanked the stream just downstream of the Lower 3 Sister Falls.

The arbor no longer stands, and the stone plaque has spalled, leaving it unreadable. At some point one of the wooden seats and the footbridge that spanned the stream had been replaced with inappropriately-sized lumber. By 2001, the wooden seats and footbridge were replaced by HPTC with more appropriately sized rustic timbers similar to the original. The benches and bridge crossing are now starting to show signs of deterioration. The retaining wall has partially collapsed along the north bank of the stream. More stepping stones are visible for the path leading to the Farm Track, but the flagstone paving for the memorial are uneven and covered with a layer of dirt. (See *Gray Arbor Memorial & Lower 3 Sisters Falls* Development Detail B.)

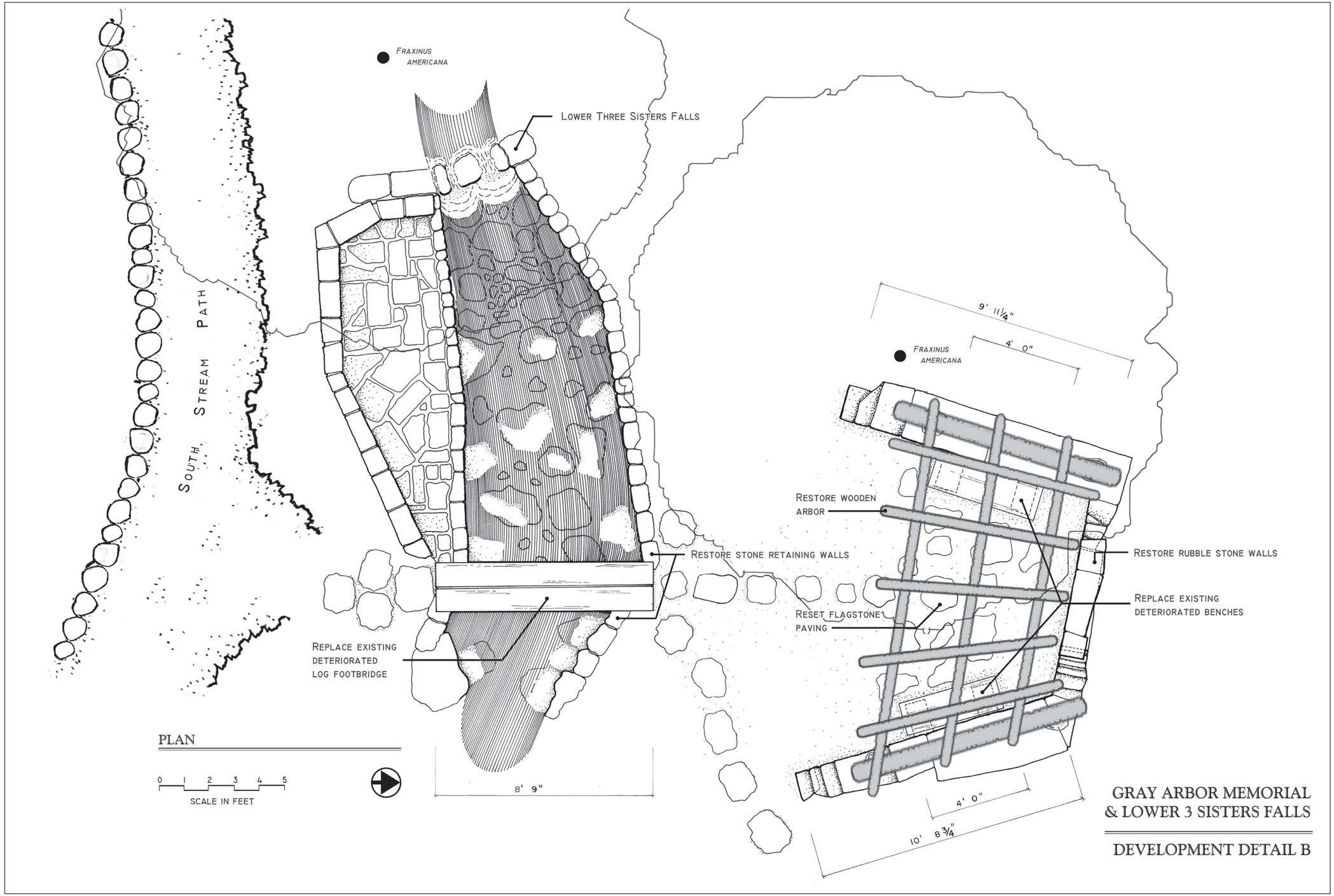
Recommended Treatment Actions – Gray Arbor Memorial:

- Restore and stabilize the rubble stone walls of the memorial by repointing the mortar.
- Restore the wooden arbor.
- Restore the deteriorated stone retaining walls along the streambank.
- Replace existing deteriorated rustic timber benches and log footbridge.
- Stabilize and reset the flagstone paving.

- Install a replication of the original plaque in memory of "William Gray" in the same location. (See "Woods and Groves Have Felt Thy Blessing" for possible inscription.)

Figure 3.34 Gray arbor memorial as seen with all the structural elements, 1963. Photo by Abbie Rowe (MRCE Photo Archive, CD #95).

Figure 3.35 Deteriorated Gray arbor memorial (NCR 2005).



Map 3.3 Gray Arbor Memorial & Lower 3 Sisters Falls, Development Detail B. (A NCR modified drawing based on the Dumbarton Oaks Park HABS documentation, http://www.loc.gov/pictures/item/dc0640.sheet.00020a/resource/).

Old Pump House – Predating Farrand's design for the valley garden, the pump house consists of two high and two low walls made of local stone laid in mortar. The remains of a threshold can be found in an opening on the east elevation. The roof was constructed of rough-cut timber and cedar shakes and a metal water wheel was added inside the pump house as a decorative element. Today the roof is gone, and the remnants of the water wheel that had broken into sections are submerged in the water trough. Some other metal fragments remain beside the structure and are deteriorating.

Recommended Treatment Actions – Old Pump House:

- Remove debris and clean out drain line to remove the standing water within the Old Pump House foundation walls.
- Stabilize and repair the stone walls and reconstruct the roof structure.

Figure 3.36 Old pump house and mill stone with fix waterwheel, 1929-1932 (DOSLA Photo Archive, #260.AR.LA.GP.13.08).

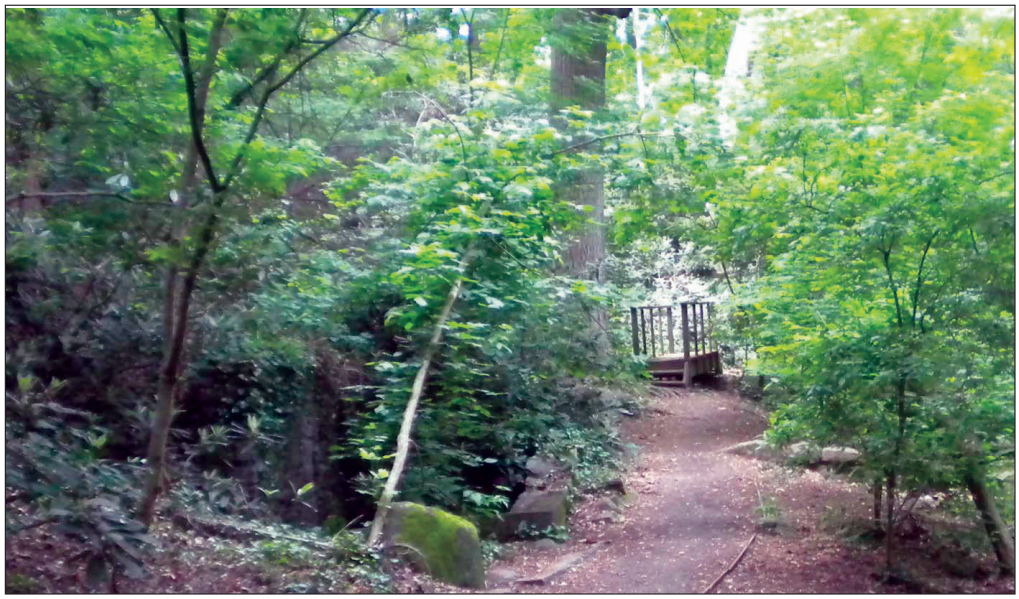


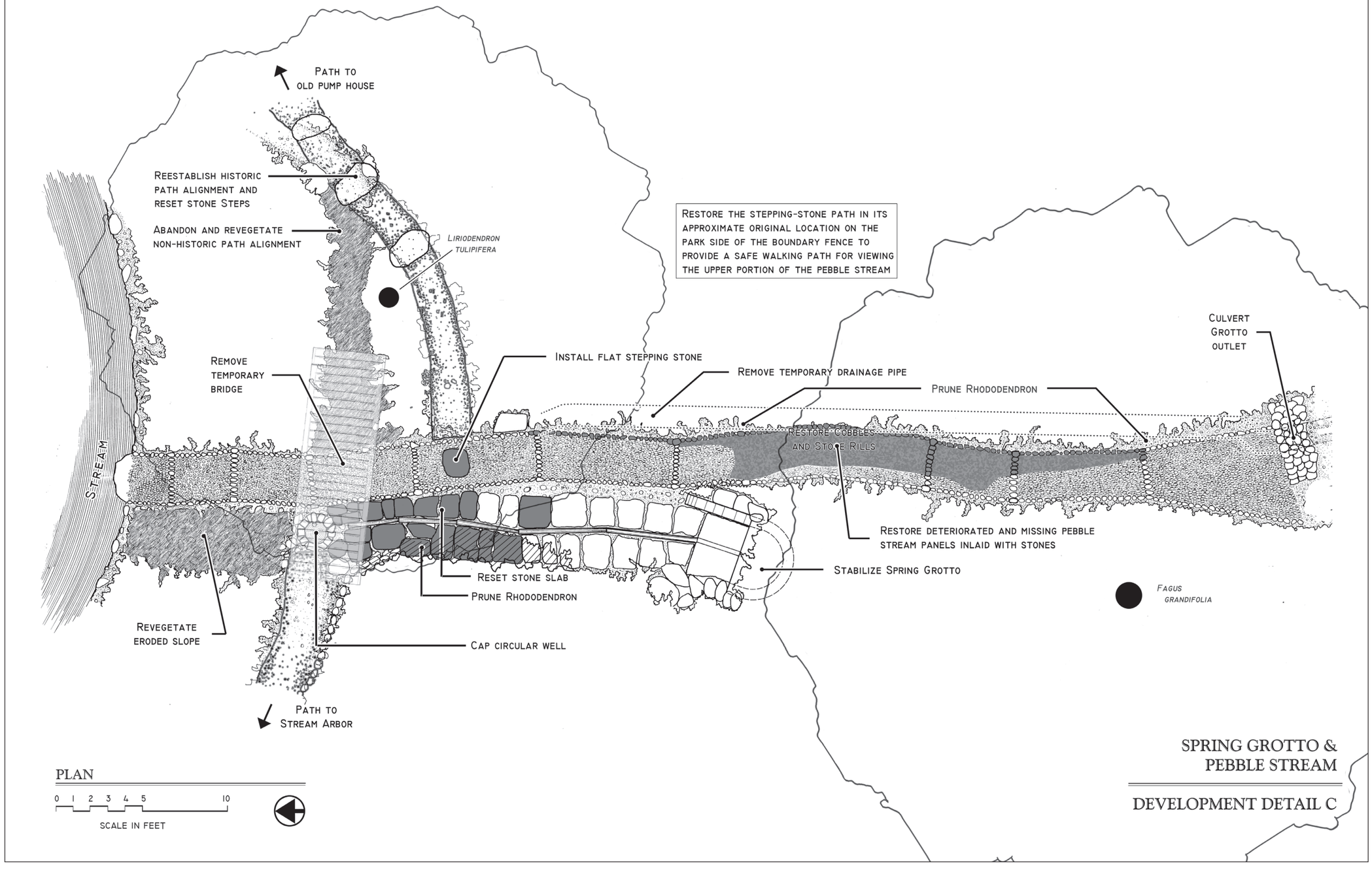
Figure 3.37 The Old Pump House ruin no longer resembles the garden folly that Farrand designed (NCR 2012).

- Replace the metal water wheel with a replica of the original utilizing the drawings developed by the Historic American Building Survey (HABS) to reproduce features and conserve selected remnants of the water wheel. (See *Appendix* for a series of HABS drawings for details of workings for Old Pump House.)
- Clean out the water feeder pipe from the spring grotto and install a new channel from the outlet so that water can fall on the replicated water wheel.

Spring Grotto and Pebble Stream – Farrand created a unique system separating natural spring water from stormwater. A brick half-dome grotto was built around a natural spring. Peeled cedar saplings, laid end-to-end with a grooved channel cut into their top surface, carried the spring water down to a circular "well" near the edge of the stream, then through an underground pipe to the Old Pump House. Flagstone pavers were laid along both sides of the cedar channel. The pebble stream consisted of a series of sloped concrete slabs inlaid with small round stones. Rows of larger rounded stones separated the slabs. At the top, a culvert outlet constructed of rounded stones emptied stormwater onto the slabs and directed the water into the stream.

Excessive runoff from Dumbarton Oaks Garden's greenhouse work yard emptied onto the pebble stream causing portions of the concrete pebble stream to collapse, and be undermined. In 2000, to limit further deterioration, a temporary pipe was installed in the rutted section and backfilled, directing the storm drain water further down the slope. As part of the south stream path, the

Figure 3.38 Overgrown vegetation and deteriorated Spring Grotto and pebble stream with unsightly green pipe (NCR 2012).



Map 3.4 Spring Grotto & Pebble Stream, Development Detail C. (A NCR modified drawing based on the Dumbarton Oaks Park HABS documentation, http://www.loc.gov/pictures/item/dc0640.sheet.00025a/resource/).

National Park Service constructed a footbridge over the pebble stream and grotto cedar channels to provide a temporary safe crossing over the features.

Although runoff from the Dumbarton Oaks Garden property is not as severe, there are still noticeable washouts and erosion around the temporary pipe. Also recent changes in the geohydrology, possibly due to off-site construction activities, may have caused the natural spring to stop flowing from the grotto feature which prompted the removal of the cedar channels. (See *Spring Grotto and Pebble Stream* Development Detail C.)

Figure 3.39 (left) Cedar rill detail directing spring water into circular well (NCR 2000).

Recommended Treatment Actions – Spring Grotto and Pebble Stream:

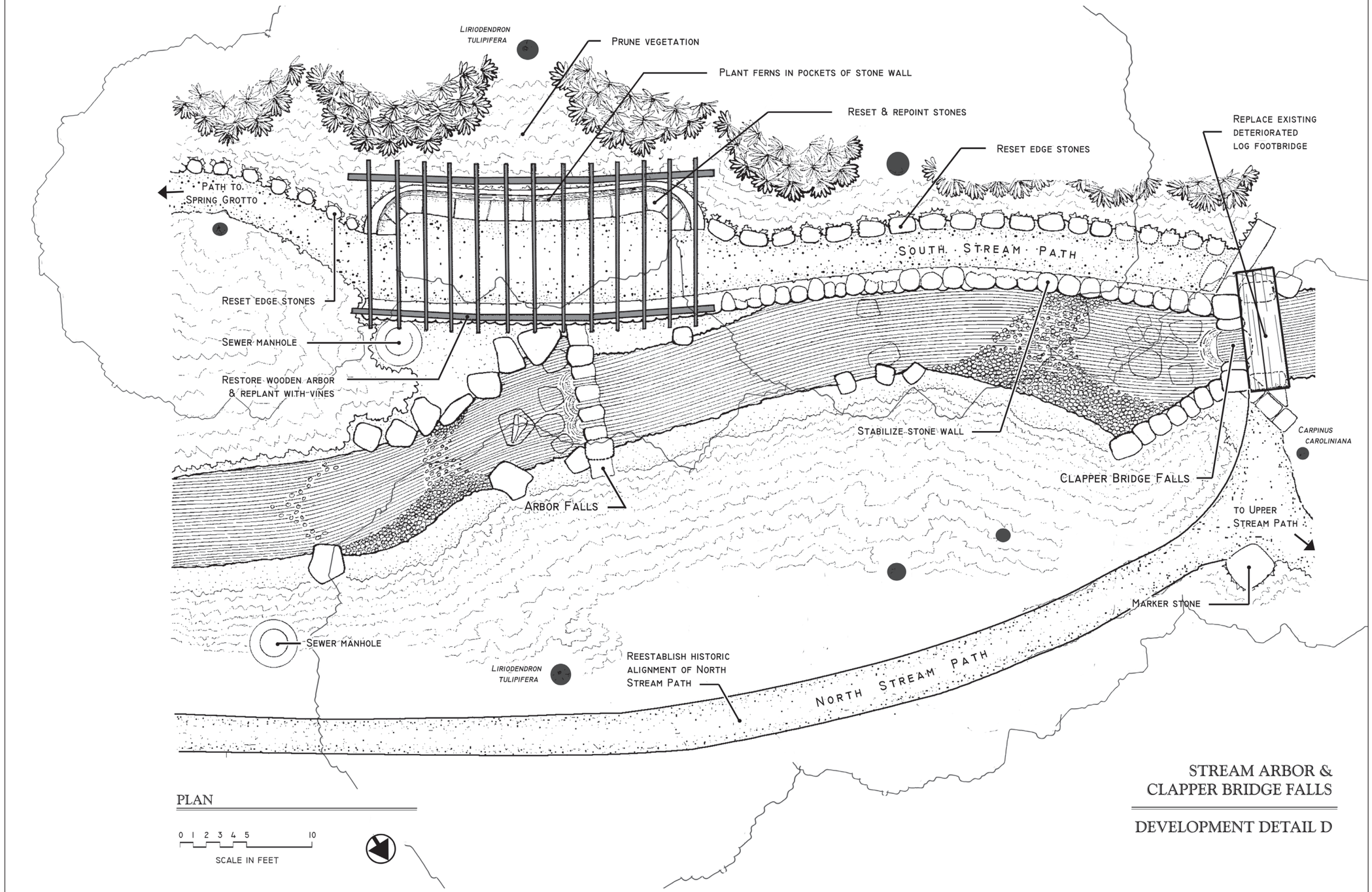
- Based on the design for the lower intact panels, reconstruct and maintain the concrete panels inlaid with small round stones for the upper and middle section of the pebble stream. In conjunction with the panel restoration remove the temporary pipe running down the pebble stream. (Due to the repairs to an existing pipe and changes in off-site drainage patterns, this pipe extension is no longer needed.)
- Remove vegetative debris on and around the pebble stream and half-domed brick grotto.
- Prune back the rhododendrons within spring grotto and pebble stream area to open views to the feature from the south stream path. (See *Southern Slope – Vegetation – Rhododendron Plantation* for specific pruning details.)
- Repoint the spring grotto brick walls. Restore the missing elements of the grotto based on historic documentation.
- Without the constant water flow from the grotto, reconsider the need to install the cedar channels. Instead reset and mortar in place the existing stone slabs and restore any missing elements based on historic documentation. In the event that the spring starts to flow again from the grotto, reset the cedar channels in the groove between the stone slabs to once again direct the spring water to the circular "well."
- Restore the upper cobble culvert headwall.
- Remove the temporary bridge over the pebble stream.
- Inset a flat flagstone into the pebble stream to provide a landing to cross the feature.

Stream Arbor – The curved retaining walls and bench were made of thin slabs of coursed fieldstone, built directly into the hillside. Pockets in the wall were provided for planting. An arbor over the bench and south stream path was constructed of square timber columns, which carried two beams spanned by smaller round joists, covered with a tangle of grapevines. The south stream path ran from the spring grotto and continued through the Stream Arbor to a log footbridge crossing at the Clapper Bridge Falls.

Although the original wooden arbor no longer stands, the stone retaining wall and bench continue to serve as focal element beside the Arbor Falls and Clapper Bridge Falls. There was minimal deterioration on either end of the retaining wall. The NPS stabilized the wall by 2001 and once again reinstated a safe crossing point over Clapper Bridge Falls with the installation of a rustic log footbridge. Although ferns no longer grow in the plant pockets, natural mosses cover the stone giving the structure a rustic and ageless appearance. (See *Stream Arbor & Clapper Bridge Falls* Development Detail D.)

Recommended Treatment Actions:

- Reset the displaced stones at both ends of the Stream Arbor and repoint the stone walls.
- Replicate the historic rustic wooden arbor that extended over the path to rest on columns set on the stone retaining wall along the stream.
- Replace existing deteriorated rustic log footbridge at the Clapper Bridge Falls.
- Prune vegetation trailing over the retaining wall and remove seasonally debris (leaves, etc.) from the bench as needed.
- Retain natural moss growth on stone.
- Replant ferns in the planting pockets of the stone wall and appropriate vines on the arbor structure. (Please refer to the *Appendix* plant survey *Stream Valley – Lower Stream Valley* for recommended plant selection.)
- Reset vertically-placed edge stones that are dislodged.



Map 3.5 Stream Arbor & Clapper Bridge Falls, Development Detail D. (A NCR modified drawing based on the Dumbarton Oaks Park HABS documentation, http://www.loc.gov/pictures/item/dc0640.sheet.00026a/resource/).

Figure 3.40 (right) Rustic wooden arbor structure and stone bench with planting pockets for ferns, 1929-1932 (DOSLA Photo Archive, #266.AR.LA.GP.13.04).

Figure 3.41 The missing arbor structure changes the character of the Stream Arbor bench (NCR 2012).

Small-Scale Features

There was a concentration of small-scale features along the stream, including pedestrian bridges, benches, birdbaths, a statue, a millstone, and marker and edging stones. Each played a role in the design, whether as a curiosity – such as the millstone – to lend interest to the garden, or as a functional element – such as the teak benches strategically placed to enable visitors to rest and enjoy the sights and sounds of the valley.

Many of these features have been lost or damaged, thus diminishing visitors' ability to perceive and enjoy the beauty of the park. To correct some of these

Figure 3.42 Original rustic log footbridge over Clapper Bridge Falls, 1945 (ROCR Photo Archive #610-C, 16.34).

Figure 3.43 Installing the simple double teak-style bench will provide a resting place for park visitors, 1961 (MRCE Photo Archives, CD #110).

deficiencies, by 2001 two of the log footbridges were installed at the Gray arbor falls and at Clapper Bridge Falls crossings, but they are starting to show deterioration.

Recommended Treatment Actions:

Overall

- Preserve and maintain all existing small-scale features in their historic locations.

Pedestrian Bridges

- Install the remaining rustic log footbridge at West Laurel Falls after the runoff is corrected on the north side of this crossing point. Whenever possible, large oak trees downed within Rock Creek Park should be used for replacement of the rustic log footbridges. (See *Stream Valley – Circulation* for description of the footbridges.)
- Replace the two existing deteriorated rustic log footbridges at the Gray arbor memorial and the Clapper Bridge Falls stream crossing. (See description above for source of logs.)

Site Furniture

- Install the original simple teak-style bench, in both single and double sizes, in their historic locations along the stream path, including: north of the stone bridge; along the north stream path across from the West Laurel Falls; and at the base of a tulip poplar between West Laurel Falls and Old Water Wheel Falls. Reassess whether this style of bench is warranted for other areas in the park.
- Conserve the original shell-shaped birdbath stored at the Museum Resource Center and recast replicas.[13] Place the replica in the historic locations along the lower stream path, north side, near West Laurel Falls, and south side, lower portion of meadow west of Forsythia Hill.

Millstone

- Preserve and maintain the millstone in its historic location beside the Old Pump House. To maintain Farrand's notion of antiquity, allow the natural mosses to continue to grow on the stone, but remove any woody vegetation growing on it or in the center hole.
- Conduct further research on the origin of the millstone and whether it originated from the Blisses Pre-Columbian collection.[14]

Figure 3.44 Possible Pre-Columbian millstone beside Old Pump House (NCR 2012).

Figure 3.45 Edging stones and marker stones use to be more apparent historically, March 23,1945 (ROCR Photo Archive, #431-G, 16.13A).

Figure 3.46 Edging and marker stones have lost their definition at critical locations (NCR 2013).

Edging and Marker Stones

- Clear encroaching vegetation and remove built-up soil to restore edge stones to their historic appearance.
- Install new marker or edge stones, where they are missing (based on historic documentation) to redefine the path system and mark design features. (See *Stream Valley – Circulation* section for location of edge stones and marker stones.)

Statue

- Instead of replicating the Unicorn Lady statue that is now located in the Director's Garden at Dumbarton Oaks Gardens, place a temporary rotating exhibit (sculptural element) that reflects Farrand's ideals of the progression to the wilderness in the approximate location of the Unicorn Lady statue.

Designed Woodland

Circulation

Since 1941, Lovers' Lane has served as the official entrance to Dumbarton Oaks Park. Once visitors passed through the gate, they followed the circular walk along the stream, eventually returning to the starting point at the gate. The Lovers' Lane gate was secured and open only during certain seasons. After the park gates were opened year-round, the National Park Service allowed an informal entrance and trail from the western branch of Whitehaven Street, NW that came into the park through the woodland to remain.[15]

The designed woodland was the culmination of the outward journey on the circular walk. Three ten-foot-wide grass paths led through the designed woodland back to a meadow. Steps made of railroad ties and stepping stones were constructed on the steep slopes. Only one of the paths is still used, although there are remnants of another. The trail from western branch of Whitehaven Street, NW crosses the western boundary of Dumbarton Oaks Park and connects to the upper stream path and the lower most woodland path located near the Islet.

Recommended Treatment Actions:

- Restore the historic woodland paths and steps through the designed woodland where their integrity has deteriorated or they are missing. The character of the historic paths changed based on the topography in the woodland. In the gradually sloping areas, there was a ten-foot wide grass path. In the steeper sections, the path narrowed to a series of stone or railroad tie steps. (See CLR *Part 1*, *Analysis and Evaluation – Circulation* for a description of the paths in the designed woodland.)

Figure 3.47 View from the western branch of Whitehaven Street, NW down to the non-historic path entering the designed woodland (NCR 2013).

- Improve the surface and maintain the historic alignment and grade of the lower-most woodland path. To be consistent with the other path systems, consider maintaining a five-foot-wide woodland path with a surface material that can withstand the intensity of visitor use. The timber / railroad ties are an important historic characteristic to maintain for this pathway segment. (See *Analysis and Evaluation – Circulation* for a description of the paths in the designed woodland)
- Improve the path and entrance from the western branch of Whitehaven Street, NW, which currently serves as a secondary entrance to Dumbarton Oaks Park. Although this is not an historic entrance, Rock Creek Park management recognizes that this trail connects to a larger trail network, serves as an important link for pedestrians entering the park from the west, and connects to one of the historic woodland paths. This acceptance of the non-historic entrance will not affect the alignment of the historic woodland paths.
- Provide an accessible route from the western branch of Whitehaven Street, NW down to the lower woodland path that follows ABA, Outdoor Developed Areas guidelines. An accessible connection from this path to the upper stream path and then to the farm track could be established. (See *Overall – Circulation* for information on recommended accessible trail routes and see *Management Philosophy – Management Documents*, for ABA accessible pathway requirements.)

Vegetation

As the climax of the formal-to-informal progression that Farrand incorporated into her design for Dumbarton Oaks, the designed woodland symbolized the "wilderness," although it was carefully managed to maintain this "wild" appearance. Shrubs and herbaceous plants and bulbs were added to the understory to create an idealized and aesthetically pleasing woodland.

A few of the shrub massings remain, along with some evidence of the herbaceous and bulb plantings that were planted along the paths. Non-native invasive vegetation threatens the woodland and is degrading the tree canopy.

Recommended Treatment Actions:

- Develop a *Planting Plan* for the restoration of the designed woodland that includes treatment for the tree canopy, shrub massings, and the drifts of herbaceous plantings and bulbs within the woodland. The plan would be based on Farrand's original design intent for this area. (See *Appendix* for consolidated plant list, prepared from CLR *Part 1* and updated plant survey, regarding plant selection for the *Designed Woodland*.)
- Remove all non-native, invasive vegetation within the woodland to restore the area's historic character. Refer to the *Planting Plan* to determine what plants to remove and the methods for removal.

Small-Scale Features

In 1940, the National Park Service installed a chain-link fence along the boundary of Dumbarton Oaks Park to separate it from all adjacent properties, public and private. This was especially important when the park was only open seasonally.

At the top of the western branch of Whitehaven Street, NW, signs direct visitors to Dumbarton Oaks Park and other Rock Creek Park destinations. Although this adjacent park property is a portion of Whitehaven Parkway (U.S. Reservation #357) and is not a part of the historic boundaries of Dumbarton Oaks Park, it does provide an entry point to the western portion of the park.

Recommended Treatment Actions:

Fences and Barriers

- Repair the chain-link boundary fence where it abuts private and non-NPS properties. This is typically along the northernmost border where the "Whitehaven Street NW" right-of-way abuts the Dumbarton Oaks Park fence line.
- Remove the rusted chain-link boundary fence where it abuts adjacent Rock Creek Park boundaries, such as U.S. Reservation #357 on the western side of Dumbarton Oaks Park to eliminate unsightly features and barriers from the "wilderness" portion of the woodland.
- Install bollards or other appropriate barrier at the western branch of Whitehaven Street, NW trailhead to discourage bicyclists from riding into Dumbarton Oaks Park.

Signs

- Install an entrance sign at the western branch of Whitehaven Street, NW directing visitors to Dumbarton Oaks Park. Since this is not a historic entrance, do not use the same style sign as the Lovers' Lane main entrance signs; instead, use the Rock Creek Park standard trail sign, sized appropriately for a pedestrian scale.
- Install an interpretive wayside and interpretive brochure holder near this entrance sign.
- Install regulatory signs on a wooden post near the interpretive wayside. The regulatory signs should be in proportion to all other signs and use standard symbols for dogs on leash, no bicycles, etc.

Meadows

Circulation

There were three types of pedestrian circulation through the meadows: an undefined path across the grass of the meadow #5, the gravel farm track, and the hard-packed earthen Clifton Hill Walk. Although the character of the paths differ, they are all part of the return journey for the "circular walk." The paths are also in varying conditions: several social trails have been worn through meadow #5, creating a crisscross pattern; the farm track, degraded by stormwater runoff, lacks much of its historic character; and the alignment of the Clifton Hill Walk has shifted.

Meadow #5 Access – The 1933 Berrall map and the 1942 National Park Service existing conditions map both show that a defined path never existed through meadow #5. Visitors were supposed to make their own way through the meadow to the farm track. Now, however, several social trails cross through meadow #5, between the designed woodland, farm track and stream valley paths.

Recommended Treatment Actions:

- Reestablish native grasses in the disturbed areas.
- Install a temporary fence around the restored areas to protect them from damage until groundcover is reestablished.
- After reestablishment, cut the lower part of meadow #5 once a year to keep the grass high enough to deter visitors from creating paths.
- To maintain the historic character and minimize the development of new social trails, mow the upper half of meadow #5 as necessary to keep it at a three to four-inch height. This will permit unencumbered pedestrian access between the designed woodland and farm track and encourage visitors to choose their own route without creating a worn path through the meadow. The condition of the meadow should be reassessed if social trails reappear in this area; in that case, paths should be defined for the meadow.

Clifton Hill Walk – After the National Park Service obtained Dumbarton Oaks Park, Beatrix Farrand recommended that they install a walk along the edge of the woodland on Clifton Hill to take advantage of the views down to the stream valley. Historic documentation does not indicate Farrand's role in the final design of the walk's characteristics: its width and surface material, possible edge treatment or steps. Clifton Hill Walk is now a three-foot-wide, hard-packed earthen path with no other distinguishing features. The walk follows the grade from meadow #5 and the farm track, progressing upward through meadow # 4 to the top of the meadow #3, following the border of the northern woodland, as originally intended. When the walk enters meadow #3, however, it cuts through the middle and proceeds to meadow #2 and on to the farm track, instead of

continuing along the historic edge of the woodland to meadow #1 and then down to the farm track.

Recommended Treatment Action:

- Return the Clifton Hill Walk to its historic alignment and character, based on the available historic documentation and existing conditions information. A possible trace of the historic alignment is visible up-slope from the existing non-historic segment that cuts through meadows #2 and #3.

Farm Track – Originally, this road provided access from Lovers' Lane to a farm on Clifton Hill. Farrand incorporated the existing farm road for the return journey of the circular walk. Historic 1930s photographs show that the road consisted of two worn tracks separated by a grass strip in the center. The road is much

Figure 3.48 Grass covered farm track divided meadow #4 and meadow #5, as seen in 1962 when poet Robert Frost, Secretary of the Interior Stewart Udall and other dignitaries visited the park (MRCE Photo Archive, CD #114).

Figure 3.49 Rough rutted cobble/bare earth surface of Farm Track and one of the cast stone benches (NCR 2013).

wider now than it was historically, and is rutted in several areas. The National Park Service has laid additional gravel on top of the road to dress the surface and fill-in the depressions.

Recommended Treatment Actions:

- Restore the farm track to its historic ten-foot width. Improve subsurface and surface drainage to reduce rutting on the track by redirecting water to an infiltration trench / bioswale running along the route and perpendicular to the water flow. Also consider installing a cobble-lined drainage feature along the north edge of the Farm Track to serve as a conduit for the water flow, inspired by Farrand's use of cobble and stone for other drainage features (*i.e.*, Lovers' Lane channel and pebble stream).[16]
- Provide an accessible route along a portion of the farm track that follows ABA, Outdoor Developed Areas guidelines. A portion of the track includes a relatively level area from the Beech Grove path and stone bridge, west to a point before when the road begins to climb Clifton Hill and connects with the north stream and upper stream paths. (See *Overall – Circulation* for information on recommended accessible trail routes and see *Management Philosophy – Management Documents*, for ABA accessible pathway requirements.)
- Reestablish the historic character, appearance and alignment of the track, using a surfacing material that is compatible with the character of the original material. The selection process should also consider contemporary conditions such as frequent excessive stormwater and intensity of visitor use. The pathway surface should be overlaid on a resilient compacted base material.

Vegetation

The open space of Dumbarton Oaks Park is divided into five distinct meadows, increasing in size from east to west. Informal massings of shrubs or lines of trees define the edges of the meadows. Within the meadows are grasses and drifts of perennials and bulbs, and an occasional specimen tree. When routine maintenance on the meadows was deferred, successional growth (woody vegetation) and non-native, invasive plants became established on the fringes, thus decreasing the size of the open areas and making it difficult to discern the original meadow edge for mowing or trimming. The meadows are predominately covered with non-native, invasive herbaceous plants as well, but overall they still retain a meadow-like appearance.

Recommended Treatment Actions:

- Develop a Planting Plan to restore the vegetation that grew along, between, and within the five meadow areas (*i.e.*, drifts of perennials and bulbs, lines of trees, shrub massings, and specimen trees). (See *Appendix* for consolidated plant list, prepared from CLR *Part 1* and updated plant survey, regarding plant selection for the *Meadows*.)

- Determine the original edges of the five meadows by using a variety of techniques (historic aerial photography, age of trees, vegetation composition), and mark these on site so that the original size and configuration of the meadows can be restored and maintained.
- Remove all successional growth and non-native, invasive woody vegetation from edges to restore the original extent of the meadows. The *Plant Strategy Team* should assess the removal of native successional woody growth where it may compromise the spatial quality of a meadow (*i.e.*, meadow #5 – healthy grove of native pawpaw where gray birch use to be).
- Remove all understory and non-native, invasive vegetation growing in the lines of trees between the meadows to restore their historic appearance and to open up views between them.
- To reestablish the historic grassland appearance, a meadow management plan should be prepared. Future management of the meadows should strive to be sustainable within five years, to lessen the reliance on chemicals to control non-native, invasive plants. (Please refer to the *Appendix – Meadow Restoration Guidance* for preliminary steps for reestablishing the native grassland cover, drifts of native spring perennials and the preservation of the drifts spring bulbs.[17])
- Once the meadow is reestablished the park should mow all meadows on an established schedule and continue to monitor for selective removal of problem weeds. Mow the northern half of the meadow #5 as needed, maintaining it at a three to four-inch height, to provide easy access between the designed woodland and the farm track (See *Meadows – Circulation – Fifth Meadow Access*, for a description of the meadows circulation system.) Per-

Figure 3.50 Spring flowering bulbs and dogwood trees are still a seasonal highlight within the meadows (NCR 2013).

form the first mowing after the spring-flowering bulbs and perennials have finished blooming and their foliage has died back.

Small-Scale Features

Three concrete or cast stone benches are located along the farm track were probably donated by the Blisses in 1941 for the new public park. They are simple, elegant, backless chaise lounge form seats. It is not known who designed these features, but they are similar to other cast-stone details in the upper gardens. Two are placed to take advantage of views up into meadows #2 and #4 and the third stands at the point where the path leading across meadow #5 intersects with the farm track.

The only other features are related to an animal graveyard located on the western edge of meadow #5. It was the burial ground for the Blisses's dogs and two of their horses. This feature is also referred by Farrand as the "Quadrangle," the name of one of the horses buried there. Originally there were eight stones, marking the animals' names and their birth and death dates. Only six stones remain bearing the names of the Blisses's dogs. The missing stones bore the names of the horses.

Recommended Treatment Actions

Site Furniture

- The cast stone benches are in fair condition, except for a few damaged areas where the concrete has been chipped. Preserve the benches and repair the damaged areas using approved methods that match the existing color, texture, and character of the original casting. Keep the benches in their current locations along the farm track.
- Additional site furnishings may be added if they are appropriate to the historic use of Dumbarton Oaks Park, and they are placed in locations that complement the historic layout.

Gravestones

- Preserve the remaining six stone grave markers in the Animal Graveyard and clear the herbaceous plant material away from the stones so that they remain visible throughout the year.

Northern Woodland

Circulation

Although the original purpose of the Northern Woodland was to provide a backdrop for views from the upper gardens, the development of properties along the east branch of Whitehaven Street, NW created an unplanned visitor use pattern from this area to Dumbarton Oaks Park. One worn trail from the eastern branch of Whitehaven Street, NW connects to the northernmost end of the Farm Track. Another well used social trail continues along the northern boundary fence line and then down the slope to the southeast until it emerges from the woodland and connects with the Clifton Hill Walk between Meadows 2 and 3.

Recommended Treatment Actions:

- Formalize the trail connection between the eastern branch of Whitehaven Street, NW and the Farm Track, and define an alignment that diminishes erosion problems.
- Deter use of the social trail through the Northern Woodland, by improving the connections of the other trail segment to the Farm Track.
- Install NPS standard trail signs at this entrance. (See *Northern Woodland Small-Scale Features*.)

Vegetation

The northern woodland serves as the backdrop for the views from the terraced upper gardens near the main house and as a vegetative buffer between the park and adjacent properties. Mixtures of conifers, hardwood trees, and mostly-de-

Figure 3.51 A few hemlocks and other conifers grow in the northern woodland interspersed with an invasive exotic edge and understory (NCR 2013).

ciduous understory plants have filled in this area over time. Properties to the north of Dumbarton Oaks Park were subsequently developed, impacting the woodland in various ways. Stormwater run-off from these developed areas and the introduction of non-native, invasive vegetation have adversely affected the woodland. Non-native, invasive vegetation now runs rampant along its edges and within the understory, changing its overall character. Infestations of gypsy moth and wooly adelgid have also severely harmed or killed the stands of native oaks and hemlocks growing in this area.

Recommended Treatment Actions:

- Develop a Planting Plan to guide the restoration of the transitional and woodland vegetation. (See *Appendix* for consolidated plant list, prepared from CLR *Part 1* and updated plant survey, regarding plant selection for the *Northern Woodland*.)
- Remove all invasive vegetation from the edges of the woodland and establish a clear-mow line along it. See description for the *Meadows* on how to determine the woodland edge. Refer to the Planting Plan to determine what plants to remove and methods for removal.
- Remove the large stand of non-native, invasive, Norway maple from the woodland and follow reforestation guidance as described in the *Appendix*.
- Maintain the historic character of the woodland so that it can continue to act as a buffer between the adjacent lands and as a backdrop for the views from the upper gardens and the park.

Small-Scale Features

A chain-link fence was installed in 1940 along the boundaries of Dumbarton Oaks Park. Over the years, the fence has been breached where trees have fallen or people have pulled it down. As a result, social trails have developed through the breached areas. A heavily used trail has developed along the northern boundary from the east branch of Whitehaven Street, NW, where the fence no longer serves as barrier.

Recommended Treatment Action:

Fence

- Repair the chain-link boundary fence where it abuts private and non-NPS properties.
- Formalize and improve the entrance opening in the fence from the east branch of Whitehaven Street, NW.

Signs

- Install an entrance sign at the east branch of Whitehaven Street, NW directing visitors to Dumbarton Oaks Park. Since this is not a historic entrance, do not use the same style sign as the Lovers' Lane main entrance signs;

instead, use the Rock Creek Park standard trail sign, sized appropriately for a pedestrian scale.

- Install an interpretive wayside and interpretive brochure holder near this entrance sign.
- Install regulatory signs on a wooden post near the interpretive wayside. The regulatory signs should be in proportion to all other signs and use standard symbols for dogs on leash, no bicycles, etc.

Endnotes

1 According to the Rock Creek Park Superintendent's Compendium, there are various restrictions related to bicycle use and dog use within park areas managed by Rock Creek Park. In accordance with regulations and the delegated authority provided in Title 36, Code of Federal Regulations ("36 CFR"), Chapter 1, Parts 1-7, authorized by Title 16 United States Code, Section 3, the following regulatory provisions are established for the proper management, protection, government and public use of those portions of Rock Creek Park and areas administered by Rock Creek Park under the jurisdiction of the National Park Service. Unless otherwise stated, these regulatory provisions apply in addition to the requirements contained in 36 CFR, Chapter 1, Parts 1-7.

- Bicycle use is restricted to paved roads and the paved multi-use trails extending from Wise Road and Joyce Road and from Broad Branch Road to Virginia Ave.
- Dogs must be on leash within park areas, and park visitors must comply with District of Columbia leash laws.

2 The final Guidelines for Outdoor Developed Areas were approved by the Architectural and Transportation Barriers Compliance Board (Access Board), effective November 25, 2013, accessed 1/29/2014.

3 Rock Creek Park Long Range Interpretive Plan, accessed 1/29/2014.

4 Beatrix Farrand never considered herself as a "landscape architect," believing that the term "architect" referred specifically to a designer of buildings. Instead she preferred to be regarded as a "landscape gardener."

5 This approach is an acceptable treatment for the restoration of historic landscapes as defined in The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes. Edited by Charles A. Birnbaum. U.S. Department of Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Heritage Preservation Services, Historic Landscape Initiative. Washington, D.C. 1996.

6 According to a Dumbarton Oaks property survey from 2010, the ownership of Lovers' Lane corridor is still unclear. There is not a clear title to the corridor. A deed from 1804 references an earlier abstract of title for the lane, but the abstract has not been located. The Deed from Thomas Beall to Richard Parrott July 18, 1804, Liber 11, Folio 53 states Lovers' Lane (formerly Bealls Lane) as a road left by Beall after subdividing on each side of the road. Thomas Beall acquired the property from his father George Beall through his will, March 15, 1780.

7 In 1943, an 8-inch gas line was upgraded to a 16-inch gas main down the middle of Lovers' Lane. See the CLR Part 1, p. 49 for more information.

8 Rhododendrons naturally self-layer, when stems touch the ground rooting and forming new plants. The layering process is an acceptable propagation method to produce new rooted plants from the parent plant.

9 The iron gate was removed by staff from Dumbarton Oaks, and found over thirty years later, leaning up against the building on their property. Gail Griffin, e-mail message to Maureen Joseph, February 11, 2013.

10 Beatrix Farrand to Harry Thompson, 29 March 1943; DOSLA, Rare Book Collection, Correspondence Files.

11 Information is based on Dumbarton Oaks Park Hydrologic Analysis Update, September-November 2011, by Zoe Kulakowski, December 2011.

12 Beatrix Farrand to Harry Thompson, 29 March 1943; DOSLA, Rare Book Collection, Correspondence Files.

13 The catalog number is ROCR 4523 for the birdbath stored at the National Capital Region, Museum Resource Center, Landover, Maryland.

14 The Robert Bliss Collection of Pre-Columbian Art comprises objects from the ancient cultures of Mesoamerica, the Intermediate Area, and the Andes. The Blisses traveled extensively and Robert purchased his first piece for the collection in 1914. Robert was one of the first collectors to emphasize the artistic significance of such objects, equating them with Greek and Roman antiquities. This millstone may originate from his collection or from his travels to Mexico and South America in the 1930s.

15 In 1941, landscape architect Ruth Havey (former employee of Farrand's), worked with Mildred Bliss on a design of an entrance gate to the park from Whitehaven Street, NW. The exact location of the entrance or design that was developed by Havey has not been found. In March 1941, Farrand wrote to Bliss: Miss Havey has sent me prints of the Whitehaven Street park entrance of which you spoke a few days ago. Something made me feel that probably you and she had pretty well determined on what you both thought best for this position, so I am deliberately setting it aside as being your job, not mine. CLR Part 1, p. 42.

16 Kulakowski, p. 50, Contingency Recommendations for Farm Track drainage.

17 This list provides a brief overview of possible steps to follow when developing a Meadow Management Plan. Based on "Management of Prairie Meadows" by Neil Diboll, Prairie Nursery, accessed 2/15/2013.

Chapter 4:
Record of Treatment

Record of Treatment

Introduction

The *Record of Treatment* for a cultural landscape report (CLR) provides an accurate account of the implemented treatment based on an approved CLR. It describes the as-built physical work, including any changes between the proposed and actual treatments. The intent of the record of treatment is to document treatment actions, not preservation maintenance. Treatment may be implemented over an extended time or in discrete phases.[1] A person knowledgeable about the project prepares a summary of the following:

- Intent of work
- Way in which work was approached and accomplished
- Time required to do the work
- Cost of work

Based on recommendations from the *Cultural Landscape Report for Dumbarton Oaks Park, Part 2: Design Development* (2005, revised 2011), the park has undertaken numerous projects to restore the Farrand landscape. This chapter of the report, documents the completed treatment work for the historical record and for future reference. Each record of treatment narrative contains a brief overview of historic conditions during the 1921-1951 period of significance and existing conditions prior to treatment to provide a background and rationale for the treatment decisions. It may include photographs (before, during, and after), plans, details and videos to support the narrative documentation. To make the record of treatment adaptable to documentation of projects over an extended time, it is formatted and presented in a three-ring binder in enable National Park Service (NPS) staff to add the report to once the project is completed.

Implemented treatment tasks from the *Part 2* CLR require that the park comply with Section 106 of the National Historic Preservation Act. The act requires federal agencies to review undertakings that effect properties listed or eligible for listing on the National Register of Historic Places. To facilitate the implementation of the recommendations from the *Part 2* CLR, the project team recommends entering into a site-specific programmatic agreement for the tasks outlined for Dumbarton Oaks Park with the District of Columbia State Historic Preservation Office.

This chapter is organized according to the overall landscape and the seven landscape character areas. As a project is completed a record of treatment is prepared and organized in chronological order (most recent projects added to the end).

Endnotes

[1] Adapted from Robert R. Page, Cathy A. Gilbert, and Susan A. Dolan, *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques* (Washington, DC: U.S. Department of the Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, 1998)

Documentation:

Before: Still need image

During:

Figure 1 Bridge Hollow after removal of invasive vegetation and before installation of coir logs, March 2014 (DOPC)

Figure 2 Beech Grove upper slope after invasive vegetation removal and with erosion control matting installed, March 2014 (DOPC)

After:

Figure 3 Compost logs and plant stabilization of Bridge Hollow, April 2015 (NCR CLP)

Figure 4 Ground cover and shrubs filling in on Bridge Hollow slope, May 2015 (NCR CLP)

Appendix

Appendix A: Consolidated Plant List

Appendix A-2

Dumbarton Oaks Park, Rock Creek Park

Species	Common Name	# Farrand	# Locations Cited	Lovers' Lane	Lovers' Lane Entrance and Beech Grove	Southern Slope						Stream Valley						The Meadows					Designed Woodland	Northern Woodland	Native	Non-Native	Non-Native Invasive
						Bridge Hollow	Forsythia Hill	Southern Slope Meadow	Hazel Walk	Rhododendron Plantation	Bamboo Plantation and the Western Boundary	Lower Stream Valley	Laurel Pool	Tulip Glen	North Bank	Meadow Path	Unicorn Lady	Meadow #1	Meadow #2	Meadow #3	Meadow #4	Meadow #5					
Trees																											
Acer negundo	boxelder	**5**	14		F/C	F/C	F/C	nc		unk	F/C	unk	nc	nc	nc	nc	nc					nc		F/C	X		
Acer palmatum	green-leaf Japanese maple	**-**	3		nc				nc														nc			X	X
Acer platanoides	Norway maple	**-**	13	nc	nc	nc	nc	nc		nc	nc	nc		nc	nc							nc	nc	nc		X	X
Acer rubrum	red maple	**7**	11	F/C	nc					unk	F/C	unk		F/C					F/C		F/C	unk	F/C	F/C	X		
Acer saccharinum	silver maple	**8**	16	F		F/C	F/C	F	F	unk		unk	F/C		F/C		unk	unk	unk	unk	unk	unk	F/C		X		
Acer saccharum	sugar maple	**8**	13		unk	unk	unk	F/C	F/C			F/C	unk	F/C	F/C		F/C	unk					F/C	F/C	X		
Acer sp.	maple	**2**	3	unk									F											F/C	X	X	X
Aesculus hipposcastanum	horse chestnut	**1**	2						F/C															unk		X	
Ailanthus altissima	tree-of-heaven	**-**	10		nc		nc										nc	nc	nc	nc	nc	nc	nc	nc		X	X
Asimina triloba	tall pawpaw	**-**	1																			unk			X		
Bambusa sp.	bamboo	**1**	3	nc							F/C					nc										X	X
Betula nigra	river birch	**3**	3																			F/C	F/C	F/C	X		
Betula populifolia	gray birch	**1**	1																			F/C			X		
Carpinus caroliniana	American hornbeam	**8**	9		F/C						F/C	F/C	F/C	F/C	F/C	unk							F/C	F/C	X		
Carya tomentosa	mockernut hickory	**14**	15		F/C	F/C	F/C	F/C				F/C	F/C	F/C	F/C		unk	F/C		F/C	F/C	F/C	F/C	F/C	X		
Carya sp.	hickory	**4**	4	F/C						F/C										F/C				F/C	X		
Castanea dentata	American chestnut	**1**	1				F																		X	X	
Catalpa sp.	catalpa	**1**	1																				F/C		X		
Cercis canadensis	Eastern redbud	**4**	4													F	F/C					F	F		X		
Cornus florida	flowering dogwood	**14**	15	F			unk		F/C			F/C	F/C		F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	X		
Cornus mas	cornelian cherry	**6**	6									F/C	F/C		F/C		F/C	F/C					F/C			X	
Corylus sp.	hazel, filbert	**1**	1						F/C																X	X	
Crataegus sp.	hawthorn	**-**	1											unk											X	X	
Diospyros virginiana	common persimmon	**1**	1											F/C											X		
Elaeagnus umbellata	autumn olive	**-**	2									nc									nc					X	X
Fagus grandifolia	American beech	**8**	9	F/C	F/C					F/C	F/C			F/C				F/C	unk				F/C	F/C	X		
Fraxinus americana	white ash	**12**	14							F/C	F	F/C	unk	F/C	F/C	unk	F/C		F/C	F/C	F/C	F/C	F/C	F/C	X		
Fraxinus pennsylvanica	green ash	**4**	10		nc	F/C				unk		F/C	unk	F/C	F/C	unk			unk	unk					X		
Gleditsia triacanthos	common honeylocust	**-**	1																			unk			X		
Halesia carolina	Carolina silverbell	**4**	5			F/C					F/C	F/C			unk								F/C		X		
Hamamelis virginiana	common witch hazel	**1**	1													F									X		
Ilex opaca	American holly	**6**	9	F	unk				F/C			unk					unk	F/C		F/C	F/C			F/C	X		
Juglans nigra	black walnut	**14**	17		F/C	F/C	F/C		F/C		F	F/C	unk		F/C	unk	F/C	unk	F/C	F/C	F/C	F/C	F/C	F/C	X		
Juniperus virginiana	Eastern red cedar	**7**	9									F		F/C	F/C	unk		unk		F/C	F/C	F/C		F/C	X		
Liquidambar styraciflua	sweetgum	**4**	5								F/C					unk	F/C					F/C	F/C		X		
Liriodendron tulipifera	tulip poplar	**18**	19	F/C	F/C		F/C	F/C	F/C	F/C	F	F/C	F/C	F/C	F/C	unk	F/C	F/C		F/C	F/C	F/C	F/C	F/C	X		
Maclura pomifera	Osage orange	**10**	10	F/C	F/C							F/C		F/C	F/C			F/C		F/C	F/C		F/C	F/C		X	X
Magnolia x soulangiana	saucer magnolia	**1**	2		unk								F/C													X	
Magnolia virginiana	sweetbay magnolia	**4**	4			F	F/C					F/C						F/C							X		
Malus sp.	wild crabapple	**5**	14		F/C	unk		nc		nc		unk	F/C	F/C	F/C	unk		unk	unk	unk	F/C	unk			X	X	
Metasequoia glyptostroboides	dawn redwood	**-**	1																			nc				X	
Morus alba	white mulberry	**5**	12	F/C						unk	unk	unk					unk	unk	F/C	F/C	F/C	F/C	unk	unk		X	X

Dumbarton Oaks Park, Rock Creek Park

						Southern Slope						Stream Valley						The Meadows									
Species	**Common Name**	**# Farrand**	**# Locations Cited**	**Lovers' Lane**	**Lovers' Lane Entrance and Beech Grove**	**Bridge Hollow**	**Forsythia Hill**	**Southern Slope Meadow**	**Hazel Walk**	**Rhododendron Plantation**	**Bamboo Plantation and the Western Boundary**	**Lower Stream Valley**	**Laurel Pool**	**Tulip Glen**	**North Bank**	**Meadow Path**	**Unicorn Lady**	**Meadow #1**	**Meadow #2**	**Meadow #3**	**Meadow #4**	**Meadow #5**	**Designed Woodland**	**Northern Woodland**	**Native**	**Non-Native**	**Non-Native Invasive**
Morus rubra	red mulberry	**1**	3				F/C				unk				unk										X		
Nyssa sylvatica	black gum	**4**	7		F/C		unk									unk		unk				F/C	F/C	F/C	X		
Oxydendrum arboreum	sourwood	**1**	1						F/C																X		
Paulownia tomentosa	empress tree	**3**	5				F/C	F/C			F								unk				nc			X	X
Pinus strobus	white pine	**-**	2																				unk	unk	X		
Platanus occidentalis	sycamore	**2**	2				F/C																F/C		X		
Prunus pensylvanica	pin cherry	**-**	1																			unk			X		
Prunus serotina	black cherry	**7**	18	unk	F/C			nc	unk	unk		nc	nc	nc	nc	F/C	F/C	F/C	unk	unk	F/C	unk	F/C	F/C	X		
Prunus virginiana	common chokecherry	**3**	11		nc			nc	nc	nc		unk		unk		F/C		F/C			unk	unk		F/C	X		
Prunus sp.	cherry	**2**	2															F/C	F/C						X	X	
Prunus sp.	wild weeping cherry	**2**	2															F/C	F/C							X	
Quercus alba	white oak	**5**	7	F	F/C				unk									F/C		unk			F/C	F/C	X		
Quercus coccinea	scarlet oak	**2**	2																	F/C				F/C	X		
Quercus falcata	Southern red oak	**4**	4																	F/C		F/C	F/C	F/C	X		
Quercus imbricaria	shingle oak	**-**	1														unk								X		
Quercus montana	chestnut oak	**4**	4					F/C					F/C										F/C	F/C	X		
Quercus palustris	pin oak	**3**	4									F/C						F/C		unk	F/C				X		
Quercus phellos	willow oak	**2**	3		nc																F/C			F/C	X		
Quercus rubra	red oak	**9**	9		F/C							F/C				F		F/C		F/C	F/C	F/C	F/C	F/C	X		
Quercus velutina	black oak	**7**	8		F/C	F			unk									F/C		F/C	F/C		F/C	F/C	X		
Quercus sp.	oak *sp.*	**2**	2									F												F/C	X		
Rhus glabra	sumac	**-**	1																	nc					X		
Robinia pseudoacacia	black locust	**5**	12	unk	nc		F/C	nc	nc	F/C	F							nc			unk	unk	F/C	F/C	X		
Salix sp.	willow	**-**	1										nc												X	X	X
Sassafras albidum	common sassafras	**7**	7						F/C			F/C						F/C		F/C	F/C		F/C	F/C	X		
Tilia americana	American linden	**8**	13		F/C			F/C	F/C	unk	F/C		F/C				unk	unk	F/C	unk	unk		F/C	F/C	X		
Tsuga canadensis	Eastern hemlock	**12**	12	F/C	F/C				F/C	F/C	F/C	F					F/C	F/C	F/C			F/C	F/C	F/C	X		
Tsuga caroliniana	Carolina hemlock	**1**	1														F								X		
Ulmus americana	American elm	**15**	16		F/C	F/C		F			F/C	unk	F/C	F/C	F/C	F	F/C	F/C		F/C	F/C	F/C	F/C	F/C	X		
Ulmus rubra	slippery elm	**-**	1									unk													X		
Ulmus sp.	elm	**1**	1	F/C																					X	X	X
Shrubs																											
Amelanchier sp.	serviceberry	**1**	1																F/C						X	X	
Aucuba japonica	Japanese aucuba	**-**	1		nc																					X	
Berberis thungergii 'Atropurpurea'	Japanese barberry	**-**	1									nc														X	X
Camellia sp.	camellia	**-**	1		unk																					X	
Cytisus scoparius	Scotch broom	**2**	2					F												F/C							X
Deciduous shrubs	deciduous shrubs	**2**	2											F		F									X	X	X
Elaeagnus sp.	olive	**-**	1																			unk					X
Euonymus alatus	burning bush	**-**	2		nc															unk							X
Euonymus americanus	American strawberry bush	**-**	1		unk																				X		
Forsythia intermedia 'Spectabilis'	showy border forsythia	**1**	2				F/C	nc																		X	
Forsythia suspensa	weeping forsythia	**-**	2		unk															unk						X	

Dumbarton Oaks Park, Rock Creek Park

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						Bridge Hollow	Forsythia Hill	Southern Slope Meadow	Hazel Walk	Rhododendron Plantation	Bamboo Plantation and the Western Boundary	Lower Stream Valley	Laurel Pool	Tulip Glen	North Bank	Meadow Path	Unicorn Lady	Meadow #1	Meadow #2	Meadow #3	Meadow #4	Meadow #5					
Hamamelis virginiana	common witch hazel	-	2						unk			unk													X		
Hibiscus syriacus	Rose-of-Sharon (purple)	-	2					unk				unk															X
Hydrangea arborescens	wild hydrangea	-	4				unk		unk	unk										unk					X		
Hydrangea sp.	wild hydrangea	-	1											nc											X	X	
Kalmia latifolia	mountain laurel	**5**	5		F	F			F/C				F/C				F/C								X		
Leucothoe fontanesiana (catesbaei)	drooping leucothoe	**1**	2						unk														F/C		X		
Ligustrum ovalifolium	California privet	**1**	1	F																							X
Ligustrum sp.	privet	**1**	1	F																							X
Lindera benzoin	spicebush	**6**	21	F/C	F/C	unk	unk	unk	unk	unk	unk	F/C	unk	unk	unk	unk	unk	unk	unk	unk	unk	F/C	F/C	F/C	X		
Lonicera tatarica	tatarian honeysuckle	-	18		unk	unk	nc		unk	nc	unk	unk	unk	unk	unk	unk	unk	nc	unk	unk	nc	unk	unk				X
Mimosa pudica	mimosa	-	1																			nc					X
Osmanthus americanus	osmanthus	-	1		unk																				X		
Rhamnus cathartica	European buckthorn	-	4													nc				nc	nc	nc					X
Rhododendron maximum	rosebay rhododendron	**5**	5			F/C				F/C				F/C			F/C						F/C		X		
Rhododendron periclymenoides	Pinxterbloom azalea	**2**	2		F	F																			X		
Rhododendron sp.	azalea *sp.*	**3**	4						F			F		unk			F								X	X	
Rosa multiflora	multiflora rose	-	18	nc	unk	unk	nc	nc	unk		unk	unk	unk	unk	unk	unk	unk	nc	unk	unk	unk	unk					X
Rubus sp.	wild raspberry	-	14		unk	unk	unk	unk	nc	nc	nc	nc	nc			nc		nc	nc			nc	nc				X
Salix sp.	willow	**1**	1													F									X	X	X
Sambucus nigra canadensis	common elderberry	-	1													unk									X		
Viburnum alnifolium	hobblebush	**4**	8		unk	unk		unk	unk			F/C		F				F/C		F/C					X		
Viburnum dentatum	arrowwood viburnum	**2**	2								F/C									F/C					X		
Viburnum plicatum tomentosum	doublefile viburnum	**1**	7		unk	unk	unk			unk		unk		unk						F/C							X
Vines																											
Ampelopsis brevipedunculata	porcelain berry	-	19		nc	nc	nc	unk	unk		unk	unk	nc	unk	nc	nc	unk	nc	nc	nc	nc	nc	nc	nc			X
Campsis radicans	common trumpet vine	-	1															nc							X		
Celastrus orbiculatus	Oriental bittersweet	-	16		nc		nc	unk	unk		nc			unk	nc	nc	unk	nc	nc	nc	nc	nc	nc	nc			X
Clematis sp.	clematis	**1**	2	F																		unk			X*		
Euonymus fortunei	winter creeper	-	1									nc															X
Hedera helix	English ivy	**9**	19	F/C	F/C	F/C	nc	F/C	F/C	F/C	F/C	unk	F/C	F/C		nc	nc	nc	nc	nc	nc	nc	unk		X	X	X
Lonicera japonica	Japanese honeysuckle	**7**	20	F/C	F/C	F/C	nc	F/C	F/C	nc	unk	unk	F/C	F/C	unk	nc	nc	nc		nc	unk	nc	unk	nc			X
Parthenocissus quinquefolia	Virginia creeper	**1**	19	F/C	nc	nc	nc		nc	nc	unk	unk	nc	unk	nc		nc	nc	nc	unk	nc	nc	nc	nc	X		
Rhus radicans	poison ivy	-	18		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc			nc	nc	nc	X		
Vinca minor	periwinkle	**11**	11		F/C	F	F/C				F/C	F/C	F/C	F/C	F/C		F/C	F/C	F/C								X
Vitis labrusca	fox grape	**1**	19		nc	nc	nc	nc	nc	nc	nc	nc	nc	F/C	nc	nc	nc	nc	nc		nc	nc	nc	nc	X		
Vitis sp.	wild grape	-	1	nc																					X		
Wisteria sinensis	Chinese wisteria	**1**	3	nc										F				nc									X
Herbaceous Perennials																											
Acalypha virginica	Virginia copperleaf	-	2									unk										unk			X		
Alliaria petiolata	garlic mustard	-	12		nc	nc	nc	nc		nc		nc			nc	nc	nc	nc				nc	nc				X
Ambrosia artemisiifolia	common ragweed	-	6									nc	nc	nc	nc				unk		unk				X		
Arisaema triphyllum	jack-in-the-pulpit	**20**	20		F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	X		

Dumbarton Oaks Park, Rock Creek Park

Species	Common Name	# Farrand	# Locations Cited	Lovers' Lane	Lovers' Lane Entrance and Beech Grove	Southern Slope						Stream Valley						The Meadows					Designed Woodland	Northern Woodland	Native	Non-Native	Non-Native Invasive
						Bridge Hollow	Forsythia Hill	Southern Slope Meadow	Hazel Walk	Rhododendron Plantation	Bamboo Plantation and the Western Boundary	Lower Stream Valley	Laurel Pool	Tulip Glen	North Bank	Meadow Path	Unicorn Lady	Meadow #1	Meadow #2	Meadow #3	Meadow #4	Meadow #5					
Arisaema sp. #1	jack-in-the-pulpit	**3**	3				F/C	F/C									F/C								X		
Arisaema sp. #2	jack-in-the-pulpit	**13**	13		F/C	F/C	F/C	F/C							F/C		F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	X		
Arisaema sp. #3	jack-in-the-pulpit	**9**	9		F/C	F/C		F/C	F/C	F/C		F/C	F/C	F/C	F/C										X		
Arisaema sp. #4	jack-in-the-pulpit	**3**	3				F/C										F/C					F/C			X		
Asarum canadense	wild ginger	**2**	2					F/C	F/C																X		
Asclepias sp.	milkweed	**-**	2																	unk	unk				X		X
Aster sp.	aster	**-**	4													unk			unk	unk	unk				X	X	
Athyrium filix-femina	lady fern	**1**	1														F								X		
Chelidonium majus	celandine	**-**	1									unk															X
Cimicifuga racemosa	black snake root	**-**	14		unk	unk	unk				unk	unk	unk	unk			nc	unk	unk	unk	unk	unk	nc		X		
Convallaria majalis	lily of the valley	**1**	1																		F/C					X	
Cryptotaenia canadensis	honewort	**-**	8		unk		unk	unk	unk			unk	unk					unk				unk			X		
Cyperus esculentus	yellow nutsedge	**-**	5				unk	unk				nc			nc							nc			X		
Datura stramonium	jimsonweed	**-**	2																	unk	unk						X
Dicentra cucullaria	Dutchman's breeches	**1**	1						F/C																X		
Digitalis purpurea	foxglove	**2**	2									F	F														X
Dryopteris noveboracensis	New York fern	**1**	1		F/C																				X		
Duchesnea indica	Indian strawberry	**-**	10		unk	unk		unk	unk		unk	unk	unk					unk	unk			unk					X
Erigeron annuus	daisy fleabane	**-**	1																		unk				X		
Euphorbia corollata	flowering spurge	**-**	1																		unk				X		
Ferns, various	ferns, various	**4**	4			F						F	F			F									X	X	X
Festuca sp.	fescue	**1**	5		unk			F/C				unk	unk	unk											X		X
Galium aparine	goosegrass	**-**	5		nc	nc	nc		nc														nc		X	X	
Grass various	grass, various	**2**	2					F	F/C																X	X	X
Helianthus tuberosus	Jerusalem artichoke	**-**	1																				nc		X		
Helianthus sp.	sunflower	**-**	5								unk	unk	unk	unk									nc		X		X
Hemerocallis sp.	daylily	**-**	7				nc	nc				nc	nc		nc							nc	nc				X
Hosta plantaginea	fragrant plantain lily	**3**	3					F/C	F/C				F/C													X	
Houstonia caerulea	bluets	**2**	2				F					F													X		
Hydrophyllum virginianum	Virginia waterleaf	**-**	1																			unk			X		
Impatiens capensis	spotted touch-me-not	**-**	14		nc	nc	nc	nc	nc	nc	nc	nc	nc		nc	nc	nc	nc		nc					X		
Impatiens pallida	pale touch-me-not; jewelweed	**-**	8		nc	nc	nc	nc				nc	nc	nc		nc									X		
Ipomoea sp.	morning glory	**-**	1																			nc					X
Iris germanica	tall bearded iris	**1**	1		F																					X	
Iris kaempferi	Japanese iris	**1**	1										F													X	
Iris pseudacorus	yellow flag	**1**	1													F/C											X
Iris sibirica	Siberian iris	**1**	1												F											X	
Iris sp.	iris	**5**	5		F							F	F	F	F										X	X	
Lactuca canadensis	wild lettuce	**-**	1		unk																				X		
Liriope spicata	white flowering lilyturf	**2**	2									F/C	F/C														X
Liriope sp.	lilyturf	**11**	15	unk	F/C	unk	unk	F/C	F/C	F/C		F/C		unk	F/C			F/C	F/C			F/C	F/C	F/C			X
Lobelia inflata	Indian tobacco	**4**	4										F/C					F/C			F/C			F/C	X		
Lobelia siphilitica	great lobelia	**2**	3				unk					F/C		F/C											X		
Maianthemum racemosum	false Solomon's seal	**3**	3						F/C					F/C		F/C									X		

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Matteuccia struthiopteris	ostrich fern	**2**	2											F/C	F/C										X		
Mertensia virginica	Virginia bluebells	**7**	7		F/C	F/C	F/C					F/C	F/C	F/C	F/C										X		
Microstegium vimineum	Japanese stilt grass	**-**	14		nc		nc			nc	nc	nc	nc	nc	nc		nc		nc	nc	nc	nc	nc				X
Onoclea sensibilis	sensitive fern	**9**	9		F/C			F/C				F/C	F/C		F/C			F/C	F/C	F/C			F/C		X		
Osmunda regalis	royal fern	**1**	1											F/C											X		
Phlox sp.	wild phlox	**-**	1											unk											X	X	
Phytolacca americana	pokeweed	**-**	14		unk	unk		nc	nc			nc	nc	nc	nc	unk		nc	unk	nc	unk		nc		X		
Plantago lanceolata	buckhorn plantain	**-**	1																			unk					X
Plantago major	common plantain	**-**	13		unk	unk	unk	unk				unk	unk	unk	unk	unk		unk	unk		unk	unk					X
Poa sp.	bluegrass	**1**	1					F/C																			X
Podophyllum peltatum	mayapple	**19**	20		F/C	F/C	unk	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	X		
Polygonum cuspidatum	Japanese knotweed	**-**	5					nc				nc				nc	nc					nc					X
Polygonum pensylvanicum	Pennsylvania smartweed	**-**	18		unk	unk	unk	unk	unk	unk	unk	unk	unk	unk		unk	nc	unk	unk	unk	unk	unk	nc		X		
Polygonum virginianum (tovara)	painter's palette	**-**	1											unk											X		
Polygonum sp.	polygonum	**-**	10				unk		unk		unk	unk	unk	unk			nc	unk	unk			unk			X	X	X
Polystichum acrostichoides	Christmas fern	**11**	11		F/C	F/C		F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C				F/C						X		
Potentilla canadensis	dwarf cinquefoil	**-**	1																		unk				X		
Primula polyanthus	primrose (Munstead)	**3**	3						F			F			F											X	
Rumex crispus	curly dock	**-**	9								unk	unk	nc	nc		nc	nc	nc	nc			nc					X
Setaria glauca	yellow foxtail	**-**	3		unk											unk		unk									X
Smilax rotundifolia	roundleaf greenbriar	**-**	3		unk																	nc	nc		X		
Solanum sp.	nightshade	**-**	1																			unk			X		X
Solidago canadensis	Canada goldenrod	**-**	5				unk					nc	nc	nc	nc										X		
Solidago sp.	goldenrod	**-**	8								unk					nc	nc	unk	unk	unk	nc	nc			X		
Sonchus arvensis	sow thistle	**-**	4		unk	unk	unk					nc															X
Symphyotrichum pilosum	white heath aster	**-**	4																	unk	unk	unk	nc		X		
Taraxacum officinale	dandelion	**-**	3				unk				unk						nc								X		
Tiarella cordifolia	foamflower	**-**	1				unk																		X		
Trifolium repens	white clover	**-**	1									unk															X
Trifolium sp.	purple clover	**-**	8								unk			unk	unk		nc	unk	unk	unk	unk						X
Trillium grandiflorum	large-flowered trillium	**1**	1										F												X		
Trillium sp.	trillium	**1**	1						F/C																X		
Urtica dioica	stinging nettle	**-**	11		nc	nc	nc				nc	nc	nc	nc	nc		nc			nc			nc		X	X	
Vinca minor	periwinkle	**2**	2							F/C														F/C			X
Viola papilionacea	common blue violet	**20**	20		F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F	X		
Viola sp.	wild violet	**1**	2			F/C									unk										X	X	
Bulbs																											
Allium vineale	wild garlic	**-**	4					nc	nc				nc	nc													X
Chionodoxa luciliae	glory-of-the-snow	**17**	17		F/C	F/C	F/C	F/C	F/C	F/C		F/C	F/C	F/C	F/C	F/C		F/C	F/C	F/C	F/C		F/C	F/C		X	X
Crocus sp.	crocus	**3**	3		F/C		F/C															F/C				X	X
Galanthus nivalis	snowdrop	**9**	9		F/C	F/C	F/C		F/C			F/C	F/C	F/C			F/C					F/C				X	X
Hyacinthoides hispanica	Spanish bluebells	**19**	19		F/C	F/C	F/C	F/C	F/C	F/C		F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C			X
Hyacinthoides non-scripta	English bluebells	**19**	19		F/C	F/C	F/C	F/C	F/C	F/C		F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C		X	
Leucojum aestivum	summer snowflake	**-**	-																								X

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Leucojum vernum	spring snowflake	**9**	9		F/C							F/C	F/C	F/C	F/C	F/C	F/C	F/C				F/C				X	X
Muscari botroides	grape hyacinth	**2**	2					F/C	F																		X
Muscari sp.	grape hyacinth	**5**	5									F/C	F/C	F/C	F/C	F/C											X
Narcissus poeticus v. recurvus	pheasant's eye daffodil	**18**	18		F/C	F/C	F/C	F/C	F/C	F/C		F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C				X
Narcissus sp.	cyclamineus daffodil #1	**2**	2				F/C										F/C									X	
Narcissus sp.	cyclamineus daffodil #2	**3**	3				F/C			F/C							F/C									X	
Narcissus sp.	daffodil	**6**	6		F/C		F/C		F			F	F		F											X	
Narcissus sp.	double daffodil #1	**2**	2														F/C					F/C				X	
Narcissus sp.	jonquilla daffodil #1	**1**	1				F/C																			X	
Narcissus sp.	large-cupped daffodil #1	**3**	3													F/C						F/C	F/C			X	
Narcissus sp.	large-cupped daffodil #2	**1**	1																			F/C				X	
Narcissus sp.	large-cupped daffodil #3	**2**	2														F/C		F/C							X	
Narcissus sp.	small-cupped daffodil #1	**3**	3									F/C		F/C	F/C											X	
Narcissus sp.	small-cupped daffodil #2	**3**	3									F/C		F/C	F/C											X	
Narcissus sp.	small-cupped daffodil #3	**1**	1														F/C									X	
Narcissus sp.	tazetta daffodil #1	**1**	1														F/C									X	
Narcissus sp.	tazetta daffodil #2	**1**	1														F/C									X	
Narcissus sp.	trumpet daffodil #1	**10**	10			F/C	F/C	F/C				F/C		F/C	F/C	F/C	F/C					F/C	F/C			X	
Narcissus sp.	trumpet daffodil #2	**1**	1				F/C										F/C									X	
Narcissus sp.	trumpet daffodil #3	**5**	5				F/C		F/C								F/C					F/C	F/C			X	
Ornithogalum umbellatum	star-of-Bethlehem	**8**	8		F/C		F/C	F/C						F/C	F/C			F/C	F/C			F/C					X
Ranunculus bulbosus	bulbous buttercup	**8**	8											F/C	F/C	F/C		F/C	F/C	F/C	F/C	F/C					X
Scilla bifolia	two-leaf squill	**17**	17		F/C	F/C	F/C	F/C	F/C	F/C		F/C	F/C	F/C	F/C			F/C	F/C	F/C	F/C	F/C	F/C	F/C		X	
Scilla siberica	Siberian squill	**17**	17		F/C	F/C	F/C	F/C	F/C	F/C		F/C	F/C	F/C	F/C			F/C	F/C	F/C	F/C	F/C	F/C	F/C			X

#Farrand - Trees:	12	16	9	11	8	12	6	15	18	12	13	14	7	12	19	9	16	18	16	30	32
- Shrubs:	3	3	3	1	1	2	1	1	3	1	3	-	2	3	1	1	4	-	1	3	1
- Vines:	4	3	3	1	2	2	1	2	1	3	5	1	-	1	1	1	-	-	-	-	-
- Herbaceous Perennials:	-	12	9	7	14	13	7	4	15	15	11	13	6	7	7	7	5	6	6	6	7
- Bulbs:	-	11	8	16	9	10	7	-	13	10	14	14	9	14	9	9	7	7	15	9	5

Appendix B: Meadow Restoration Guidance

Appendix B-2

Meadow Restoration Guidance

To serve as a starting point for the National Park Service to maintain the six distinct meadows within Dumbarton Oaks Park (*Southern Slope Meadow* and *Meadow's 1* through *5*), this meadow restoration guidance document provides "**Best Management Practices**" from experts in the field, on-line resources and recent publications. This document will be refined after implementation to provide park managers with the steps to follow for any future work to reestablish and/or maintain the meadows.

This guidance document also highlights the key **Farrand era landscape characteristics** to be preserved, reestablished or refined for the six distinct meadows and will serve as a Landscape Preservation Management Plan for the Dumbarton Oaks Park meadows.

Best Management Practices

Plant Survey – Conduct a spring plant survey of the various bulbs and perennials that naturalized within the meadows and document their approximate arrangement

Site Selection - Define full extent of the meadows and phase the implementation

Plant Selection – Match plant selection to the existing soil and growing conditions. Specify a mix of native grasses with some native perennials to reinforce the meadow-like appearance Farrand intended.

Site Preparation – Kill all the non-native, invasive plants before planting utilizing mechanized and herbicide treatment. Take extra precaution to protect the spring flowering bulbs that will be retained. Follow NPS regulations for authorized use of herbicides

Planting Time and Method – There are two recommended planting times for a successful September 1 through soil freeze-up - requires fast growing "nurse crop" that germinates in fall to help protect the soil from erosion over the winter. May also need erosion control matting for steep slopes and areas prone to water flows; or spring thaw through June 1 - requires watering within first two months to encourage higher seed germination and survival. The method for seed establishment (drill, broadcast) will be prescribed by the meadow management plan.

Mowing Schedule – Based on the meadow management plan, follow a three-year mowing schedule during the initial establishment period.

Farrand Meadow Landscape Characteristics

This information from the Dumbarton Oaks Park Part 1 CLR (2000) and National Register Nomination (2001) both refer to some similar citations regarding the inspiration for use of wildflowers, bulbs and grasses in meadows; and the actual implementation of the design and character of Dumbarton Oaks Park meadow plantings.

Although wildflowers are mentioned, there is no evidence yet to say they were purposefully planted in the meadows like the spring flowering bulbs.

From the ***Dumbarton Oaks Park Part 1 Cultural Landscape Report (2000)***
p. 78 - Farrand appears to have adopted many of Robinson's specific recommendations for the arrangement and cultivation of trees, shrubs, and herbaceous plants in the wild garden fashion. Robinson suggested growing shrubs, such as forsythia (Forsythia sp.) and rhododendron (Rhododendron sp.), in large masses on banks to achieve their maximum effect. He advocated allowing meadows to grow wild, and setting aside areas within gardens for informal groupings of exotic and native wildflowers. (214. Robinson, The Garden Beautiful: Home Woods, Home Landscape (London, 1906): 143.)

p. 176 - Present-day conditions indicate that the herbaceous material was laid out in crescent-shaped drifts, extending from the Tulip Glen over to the farm track and up into the meadows. Throughout the spring, a parade of blue-flowering plants, including Siberian squills, two-leafed squills, and Spanish and English bluebells mixed with drifts of pheasant's eye narcissus and mayapple, formed a blue carpet with splashes of white. Farrand appears to have made use of the shrub and tree layer to create contrasts between shade and light. Different species are grouped together, rather than being massed individually, as they were in herbaceous plantings elsewhere in the valley. Seasonal interest was extended into the winter months with cedars and hemlocks, clustered near the farm track and Laurel Pool.

p. 186 - The meadows must have been mown a few times a year to keep them open. Farrand introduced drifts of perennials and spring-flowering bulbs, such as Spanish and English bluebells, squills, and daffodils, to add spring color to the open expanse. She seems to have used the yellow color of daffodils planted in the northern section of the meadows to draw the eye up to the tree edge. One apparent exception to this rule is the fourth meadow. Its northernmost section was not visible from the stream path, and no bulbs were planted in the upper part of this meadow. A second exception is in the second meadow, where no squills or bluebells were planted, in contrast to the extensive bulb plantings in the other meadows.

From the ***Dumbarton Oaks Park National Register nomination (2001)***
Section 7/Page 22 - For decades, maintenance has consisted of mowing the mixed grasses a few times a year. Farrand introduced masses of perennials and bulbs, particularly daffodils, to add spring color to the meadows, planting the greatest number in the northern sections. The only exception was the fourth meadow, perhaps because its northernmost part was not visible from the stream paths. The regular schedule of mowing has maintained the open grassy area where

wood hyacinths, jack-in-me-pulpits, and daffodil species are still evident in the spring. The fringes of the meadows are dominated by invasive weeds. The surrounding woodlands have encroached on the meadows, reducing their areas and blocking some important views and vistas. Dogwoods, cherries, tulip poplars, and river birches still define the original borders, though some have a thick understory in areas which were probably intended to remain open. A social trail has been worn through the center of the fifth meadow to an area where a formal bench donated in recent years was located (the bench has now been moved to the side of the meadow). (45. A 1966 NPS sign plan suggests that the NPS tried to limit the wearing of paths through the meadows by placing signs instructing visitors to stay on the designated paths. In many respects, the social trails that now cross the westernmost meadow reflect the current usage of the park.)

Section 8/Page 39 - Meadows, Robinson said, should be sown with drifts of bulbs; their natural growth habit among the grasses would prevent the appearance of artificial patterning, and they would wither before mowing. (31 See The Wild Garden, xvii, xviii, and chapter II, "Example from Hardy Bulbs in Grass of Lawns or Meadows.")

Section 8/page 46 - In at least a couple of designs other than Dumbarton Oaks, Farrand showed an interest in wild gardens. Most notably, she spent decades exploring the naturalization of the native plants at Reef Point. Her landscape for The Haven, in Northeast Harbor, Maine, where she worked from 1925 to 1945, included a large wildflower meadow.56 While none of her other gardens possessed as extensive a naturalistic area as Dumbarton Oaks, naturalism and nature study form a consistent theme in her writings. (56. Information from Griswold and Weller, The Golden Age of American Gardens and Hewitt, The Architect and the American Country House. See the caption to the illustration on p. 33 of Griswold and Weller.)

Appendix D: National Park Service Regulatory and Policy Documents

National Park Service Regulatory and Policy Documents

National Park Service Management Policies (2006)

Vegetation Management

- Preserve cultural landscapes – Use of non-native plantings may be permitted where necessary to preserve and protect the desired condition of specific cultural resources and landscapes, plant and plant communities generally will be managed to reflect the character of the landscape that prevailed during the historic period.
- Altered Plant Communities – In altered plant communities managed for a specified purpose, plantings will consist of species that are native to the park or that are historically appropriate for the period or event commemorated. Use of exotic plants must conform to exotic species policy. Use on non-natural plantings in altered communities may be permitted und any of the following conditions:
    - Where necessary to preserve and protect the desired condition of specific cultural resources and landscapes that prevailed during the historic period.
- Introduction or Maintenance of Exotic Species – In general, new exotic species will not be introduced into parks. In rare situations, an exotic species may be introduced or maintained to meet specific, identified management needs when all feasible and prudent measures to minimize the risk of harm have been taken and it is
    - A closely related race, subspecies, or hybrid of an extirpated native species; or
    - An improved variety of a native species in situations in which the natural variety cannot survive current, human-altered environmental conditions; or
    - Needed to meet the desired conditions of a historic resource, but only where it is noninvasive and is prevented from being invasive by such means as cultivating (for plants). In such cases, the exotic species used must be known to be historically significant, to have existed in the park during the park's period of historical significance, to be a contributing element to a cultural landscape, or to have been commonly used in the local area at that time…
- Use Natives –NPS encourages the use of native plants and discourages using nonnative species in order to restore natural systems. Strive to use native plants to restore the natural landscape or as a substitute for non-native ornamental plantings.

Climate Change

- Biotic cultural resources – The NPS will anticipate and plan for the natural and human-induced processes of change. Before any major treatment of a cultural landscape is undertaken, there must be an understanding of the degree to which change contributes to or compromises the historic character of the landscape, and the way in which natural cycles influence the ecological processes with the landscape. Treatment and management of a cultural landscape will establish acceptable parameters for change and manage the biotic resources within those parameters.

Access

- Trails and Walks – The NPS will planned and developed trails and walks as integral parts of each park's transportation system and incorporate principles of universal design. All trails and walks will be carefully situated, designed and managed to accomplish the following:
    - Reduce conflicts with incompatible uses
    - Allow for a satisfying park experience
    - Allow accessibility by the greatest number of people
    - Protect park resources (natural and cultural)
- Historic Properties – The National Park Service will provide persons with disabilities the highest feasible level of physical access to historic properties that is reasonable, consistent with the preservation of each property's significant historical features. Access modifications for persons with disabilities will be designed and installed to least affect the features of a property that contribute to its significance.
- Visitor Use – NPS will make all reasonable efforts to provide access to the widest cross section of the public, to ensure compliance with the intent of the American with Disabilities Act/Architectural Barriers Act. (Please refer to the 2013 *Guidelines for Outdoor Developed Areas* for specifics related to access.)

Director's Order #28 – Cultural Resource Management (1998)

General Treatment

- All treatment and use decisions reflect consideration of effects on both the natural and built features of a cultural landscape and the dynamics inherent in natural processes and continued use.
- Work on historic structures, including modifications to improve drainage and access, does not harm the character-defining features of a cultural landscape.
- Historic materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a cultural landscape are preserved.
- Stabilization detracts as little as possible from a cultural landscape's appearance and significance. Reinforcement is concealed wherever possible so as not to intrude upon or detract from the aesthetic, historical, or archeological quality of the landscape, except where concealment would result in the alteration or destruction of historically or archeologically significant features, materials, or physical or visual relationships. Accurate documentation of stabilization procedures is kept and made available for future needs.

Biotic Systems Treatment

- Existing vegetation, both native and non-native, that contributes to the historic character of a cultural landscape… is identified, maintained, and perpetuated, as appropriate. Special consideration is given to introduced species because they may be important clues to the history of the landscape, they may include plant varieties that are rare or endangered, or they may be mistaken as "pests" and removed.

- Treatment of vegetation is based on an understanding of the functional, design, and associative values of the plant material in a cultural landscape.
- Substitution of plant material is considered in response to changes in growing conditions, susceptibility to disease and pests, or the unavailability of original material. Substitute material matches the historic material in visual, functional, and horticultural characteristics. Varieties resistant to disease, pests, and pollution are used where they meet these standards. Accurate records of substitutions are kept.
- The need for succession through several stages to retain healthy communities is considered in managing forests, woodlands, and woodlots.
- Historic exotic species are monitored and controlled to avoid spreading and disrupting desirable adjacent natural plant communities and associations. Historically inappropriate exotic species are not introduced.

Access

- Historic circulation systems are rehabilitated to accommodate health and safety codes in ways that minimize impact on character-defining features.

Appendix E: Accessibility Laws

Accessibility Laws

American with Disabilities Act /Architectural Barriers Act with Guidelines for Outdoor Developed Areas (2013)

General Overview

As a federal facility, the National Park Service must comply "to the extent practicable" and provide an accessible route for newly designed or altered portions of existing trails or pathways. To ensure access to the built environment for people with disabilities and be in compliance with the Architectural Barriers Act (ABA), the following is a general overview of key specifications outlined in the ABA Accessibility Standards with Guidelines for Federal Outdoor Developed Areas:

- Pedestrian foot trails are covered under the guidelines.
- Not all pedestrian foot trails would be required to meet the guidelines. They apply only to newly designed and constructed trails, and altered portions of existing pedestrian trails that connect to an accessible trail or designated trailhead (parking/ access point).
- Routine or periodic trail maintenance activities are not considered an alteration that would trigger application of the ABA standards.
    - An *alteration* is work done to change the original design, purpose, intent, or function of an existing trail
    - *Maintenance* is the routine or periodic repair of existing trails or trail segments to restore them to their originally designed and built condition, which does not change the original design, purpose, intent, or function for which a trail is designed. Maintenance includes:
        - Removing debris and vegetation; and clearing the trail of encroaching brush
        - Maintaining trailhead, such as filling ruts, reshaping the trail bed, repairing trail surface or washout
        - Performing erosion control and drainage work, such as replacing or installing culverts
        - Repairing or replacing deteriorated, damaged, or vandalized trail or trailhead structures
- Trails must have a firm and stable tread surface. A firm and stable surface does not require it to be paved with concrete or asphalt. For less developed areas, crushed stone, fine crusher rejects, packed soil, soil stabilizers, or other natural materials may provide a firm and stable surface. Natural materials also can be combined with synthetic bonding materials to create a more stable surface.
- A clear tread width is required to be a minimum of 36 inches. The 36-inch minimum clear tread must be maintained for the entire distance of the trail and may not be reduced by gates, barriers, or other obstacles unless a condition for exception does not permit full compliance with the provision.
- Where the tread width is less than 60 inches, passing spaces must be provided at intervals of at least 1000 feet. Where the full length of a trail does not fully comply with the trail technical requirements, a passing space must be located at the end of the trail segment that

complies fully with the technical requirements. Passing spaces must be minimum of 60 by 60 inches.

- Trail obstacles for trail surfaces constructed of concrete, asphalt, or boards, tread obstacles cannot exceed one-half inch in height at their highest point. When the trail is constructed of with materials, tread obstacles are permitted to be a maximum of 2 inches high.
- Openings in the surface of trails must be small enough so that the sphere more than on-half inch in diameter cannot pass through. Where possible, elongated openings should be placed perpendicular to the dominant direction of travel.
- The running slope for universal design of walks is typically required to be less than 5% or 1:20. Outdoor Accessibility Guidelines allow for short segments of a trail to have up to a 12% or 1:8 running slope with some restrictions. Whenever possible, trails should be constructed with lesser slopes to provide greater independent access and usability. Please see Table 1 for details.

Table 1 – Maximum Running Slope and Segment Length		
Running Slope of Trail Segment		**Maximum Length of Segment**
Steeper Than	**But Not Steeper Than**	
5% (1:20)	8.33% (1:12)	200 feet
8.33% (1:12)	10% (1:10)	30 feet
10% (1:10)	12% (1:8)	10 feet

- The cross slope must be no steeper than 2% or 1:48 if the trail surface is constructed of concrete, asphalt or boards. When the trail is constructed with other materials, the cross slope can be no steeper than 5 % or 1:20 where this is necessary for drainage.
- Resting intervals, level areas that provide an area for people to stop after a steep segment, are required between trail segments any time the running slope exceeds 5% or 1:20. The resting interval must be at least 60 inches long and 36 inches wide, and either provided within the trail tread or adjacent to the trail tread.
- Constructed elements on trails (signs and posted mounted objects) must not protrude into the trail tread. The technical requirements for protruding objects do not apply to natural features, such as tree branches and rock formations. Clearing limits for trail construction and maintenance usually require that vegetation be cut back a foot or more from the edge of the trail.
- Handrails are not required for slopes greater than 5%.
- Once a trail or trail segment is adapted to the guidelines it is required to be identified as an accessible trail on entrance signs, websites, and trail maps.

Condition for Exceptions

When a condition for exceptions does not permit full compliance with a specific provision in the technical requirements such as for the surface, clear tread width, passing spaces, tread obstacles, openings, running slope, cross slope, resting intervals, protruding objects, and trailhead signs; that portion of the trail must comply with the specific provision "to the extent practicable" when an exception is used.

- Overcoming challenging terrain would create too big an impact on the natural landscape

- Prevailing construction practices would not allow for meeting the guidelines
- If it would fundamentally alter the function, purpose or setting of the trail
- Will conflict with natural and cultural resource laws pursuant to any of the following laws:
    - National Historic Preservation Act
    - National Environmental Policy Act
    - Endangered Species Act
    - Other Federal, State, or local law, the purpose of which is to preserve archeological, cultural, historical, or other significant features; the environment; or threatened or endangered species
- Exceptions should be documented in writing why the portion of the trail could not fully comply with the guidelines
    - Documentation should be retained with the project records and should include the date the decision is made and the names and positions of the people making the decision

For further information on the ABA Accessibility Standards with Guidelines for Federal Outdoor Developed Areas please see the following website:
http://www.access-board.gov/guidelines-and-standards/recreation-facilities/outdoor-developed-areas/final-guidelines-for-outdoor-developed-areas