

Rock Creek Park
Chesapeake & Ohio Canal National Historical Park
Washington, D.C.

U.S. Department of the Interior
National Park Service



Georgetown Nonmotorized Boathouse Zone

DEVELOPMENT PLAN AND ENVIRONMENTAL ASSESSMENT



July 2016



Georgetown Nonmotorized Boathouse Zone Development Plan and Environmental Assessment

*Rock Creek Park
Chesapeake & Ohio Canal National Historical Park*

July 2016

PROJECT SUMMARY

Introduction

This environmental assessment (EA) has been prepared to evaluate development of facilities within a nonmotorized boathouse zone located along the District of Columbia side of the Potomac River in the Georgetown neighborhood. The zone is located within National Park Service (NPS)-administered land in the Chesapeake & Ohio Canal National Historical Park and in Georgetown Waterfront Park, which is part of Rock Creek Park. Recreationists in Washington, DC, have a strong interest in nonmotorized boating. Previous studies have demonstrated a steadily increasing demand for nonmotorized boating, including rowing, paddling, and standup paddle boarding.

The EA has been prepared in accordance with the National Environmental Policy Act (NEPA) and its implementing regulations (40 Code of Federal Regulations [CFR] Parts 1500–1508) and NPS Director’s Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* and the accompanying handbook. Compliance with section 106 of the National Historic Preservation Act of 1966 is being conducted concurrently with the NEPA process.

This EA also complies with Director’s Order 77-1: *Wetland Protection* and Director’s Order 77-2: *Floodplain Management*, which provide direction on complying with Executive Orders 11988 and 11990, respectively, and require that a Statement of Findings be prepared when a proposal would result in adverse impacts on floodplains or wetlands and detail the requirements and procedural elements associated with Statement of Findings.

Purpose and Need for the Action

The purpose of this project is to establish a Potomac River recreation zone that more fully supports nonmotorized recreation; increases the public’s access to the river; improves functionality of the Capital Crescent Trail (CCT) as it connects to Georgetown Waterfront Park; and respects the historic character, natural resources, and existing recreational use of the Chesapeake & Ohio Canal National Historical Park and Rock Creek Park.

Nonmotorized boating facilities are needed in Georgetown because:

- public access points for nonmotorized boating and paddle sports along the Georgetown waterfront are limited, and popularity of nonmotorized water sports (canoeing, kayaking, rowing, paddle boarding) is increasing;
- capacity at current boathouse facilities that provide access to the river and related amenities (i.e., boat storage, concessions, access facilities, boat rentals, beach, and docks) is insufficient; and
- the current configuration of the CCT and its connection to Georgetown do not provide safe and compatible access for pedestrians and cyclists with motorized vehicles to and through the zone.

Overview of the Alternatives

One action alternative is under consideration, plus the no-action alternative in which no development within the nonmotorized boathouse zone would occur. East of the Potomac Aqueduct Bridge abutment, colloquially known as the Alexandria Aqueduct, the action alternative includes optional configurations for a boathouse and plaza on site D, a proposed reconfiguration of the streetscape to improve the connections of the CCT and Georgetown Waterfront Park, and access to the private properties in the zone. The action alternative also offers options for sites A and C west of the aqueduct. Several other alternatives were considered but dismissed from further analysis. This analysis addresses the following impact topics:

water resources, including water quality, wetlands, and floodplains; historic structures and districts; land use and adjacent properties; transportation; and visitor use and experience.

How to Comment

Agencies and the public are encouraged to review and comment on the contents of this EA and the statements of findings for floodplains and wetlands during the 30-day public review and comment period by any one of several methods. The preferred method of providing comments is through the NPS's Planning, Environment, and Public Comment (PEPC) website for the park at: <http://parkplanning.nps.gov/nmbzea>. You may also submit written comments to

Tammy Stidham

National Park Service—National Capital Region

Georgetown Nonmotorized Boathouse Zone Development Plan and Environmental Assessment

1100 Ohio Drive SW

Washington, DC 20242

Only written comments will be accepted. Please submit your comments within 30 days of the posting of the notice of availability on the PEPC website. **Please be aware that your entire comment will become part of the public record. If you wish to remain anonymous, please clearly state that within your correspondence; however, NPS cannot guarantee that personal information, such as email address, phone number, etc., will be withheld.**

TABLE OF CONTENTS

Project Summary	i
Introduction	i
Purpose and Need for the Action	i
Overview of the Alternatives	i
How to Comment	ii
Chapter 1: Purpose and Need.....	1
Introduction.....	1
Purpose of and Need for Action.....	1
Project Background.....	1
Project History	1
Project Area	4
Regulatory Environment and Related Laws, Regulations and Plans	4
Planning Issues and Concerns Retained for Detailed Analysis.....	4
Water Resources	4
Historic Districts and Structures	5
Land Use and Adjacent Properties.....	5
Transportation.....	5
Visitor Use and Experience.....	5
Issues Dismissed from Further Analysis.....	6
Soils and Topography	6
Vegetation	6
Fish and Wildlife.....	6
Cultural Resources (Archeology).....	7
Socioeconomics	7
Environmental Justice	8
Indian Trust Resources.....	8
Chapter 2: Alternatives	11
Introduction.....	11
Descriptions of Alternatives.....	11
Alternative 1: No-Action Alternative	11
Alternative 2: Nonmotorized Boathouse Zone	13
Alternatives Considered but Dismissed	21
Mitigation Measures for the Action Alternative	22

Chapter 3: Affected Environment	27
Water Resources—Including Water Quality, Wetlands, and Floodplains	27
Water Quality	27
Wetlands	28
Riverine Wetlands and Submerged Aquatic Vegetation.....	30
Floodplains.....	30
Historic Districts and Structures	32
Character Defining Features of the Historic Landscape Within the Zone	32
Primary Area of Potential Effect.....	32
Secondary Area of Potential Effect.....	35
Land Use and Accessibility to Adjacent Residential and Other Uses.....	36
Area Land Use Plans.....	37
Zoning.....	37
Adjacent Residential and Other Uses.....	39
Transportation	40
Study Areas	40
Pedestrian Network	40
Bicycle Network	40
Transit	43
Trucks and Buses	45
Parking	45
Traffic	46
Visitor Use and Experience.....	49
Visitor Experience	49
Visitor Use	50
Chapter 4: Environmental Consequences	53
General Methodology for Analyzing Impacts.....	53
Type of Impact.....	53
Cumulative Impacts Analysis Method.....	53
Cumulative Projects	54
Water Resources	54
Methodology and Assumptions	54
Study Area	55
Impacts of Alternative 1: No-Action Alternative.....	56
Impacts of Alternative 2: Develop the Nonmotorized Boathouse Zone	56

Historic Structures and Districts	59
Methodology and Assumptions	59
Study Area	60
Impacts of Alternative 1: No-Action Alternative.....	60
Impacts of Alternative 2: Develop the Nonmotorized Boathouse Zone	61
Land Use and Accessibility to Adjacent Residential and Other Uses.....	62
Methodology and Assumptions	62
Study Area	63
Impacts of Alternative 1: No-Action Alternative.....	63
Impacts of Alternative 2: Develop the Nonmotorized Boathouse Zone	63
Transportation	65
Methodology and Assumptions	65
Study Area, Reasonably Foreseeable Development, and Planned Improvements.....	66
Impacts of Alternative 1: No-Action Alternative.....	68
Impacts of Alternative 2: Develop the Nonmotorized Boathouse Zone	71
Visitor Use and Experience.....	78
Methodology and Assumptions	78
Study Area	78
Impacts of Alternative 1: No-Action Alternative.....	78
Impacts of Alternative 2: Develop the Nonmotorized Boathouse Zone	79
Chapter 5: Consultation and Coordination.....	83
Public Involvement	83
Cooperating Agencies	83
Other Agency Review	83
Agency Consultation.....	84
Chapter 6: List of Preparers	87
National Park Service.....	87
Louis Berger.....	87
Chapter 7: References	89
Chapter 8: Acronyms and Abbreviations.....	97

APPENDICES

Appendix A: Consultation and Coordination Correspondence

Appendix B: Transportation Impact Assessment

Appendix C: Floodplain Statement of Findings

Appendix D: Assessment of Effects

LIST OF FIGURES

Figure 1. The Nonmotorized Boathouse Zone.....	3
Figure 2. Alternative 1: No-Action Alternative	12
Figure 3. Alternative 2	14
Figure 4. Cross-Section at Site A.....	16
Figure 5. Cross-Section at Site C.....	17
Figure 6. Cross-Section at Site D.....	18
Figure 7. Cross-Section at Site E.....	19
Figure 8. Wetlands on Site A.....	29
Figure 9. The Floodplain in the Project Area.....	31
Figure 10. Area of Potential Effect.....	33
Figure 11. Land Ownership and Easements in the Zone	37
Figure 12. Zoning in the Nonmotorized Boathouse Zone.....	38
Figure 13. Primary and Secondary Transportation Study Areas.....	41
Figure 14. Bicycle Network within Primary Study Area and 1-Mile Buffer.....	42
Figure 15. Metrobus and DC Circulator Routes within Quarter-Mile Buffer Area.....	44
Figure 16. On-Street Parking within the Primary Study Area	47

LIST OF TABLES

Table 1. Details of Alternative 2.....	15
Table 2. Wetland Vegetation	29
Table 3. Visitor Use at Thompson Boat Center	52
Table 4. Alternative 2 with Option: High Density Scenario Development Components	71
Table 5. Weekday AM and PM Peak Hour Trip Generation by User Group	76
Table 6. Saturday Peak Hour Trip Generation by User Group.....	76
Table 7. Required Agency Consultation.....	84

CHAPTER 1: PURPOSE AND NEED

Introduction

This environmental assessment (EA) has been prepared to evaluate the development of facilities within a nonmotorized boathouse zone (the zone) located along the District of Columbia side of the Potomac River in the Georgetown neighborhood (figure 1). The zone is located within National Park Service (NPS)-administered land in the Chesapeake & Ohio (C&O) Canal National Historical Park (NHP) and in Georgetown Waterfront Park, which is part of Rock Creek Park. Recreationists in Washington, DC, have a strong interest in nonmotorized boating. Previous studies have demonstrated a steadily increasing demand for nonmotorized boating, including rowing, paddling, and standup paddle boarding. The proposed action would establish a program for the zone that meets the demand and is appropriate to the constraints of the site. This project examines further development of one or all of the development scenarios explored in the 2013 feasibility study (NPS 2013) that examined the potential for development in the zone or exploration of options for improved access to the Potomac River outside the designated zone.

The EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, and implementing regulations, 40 Code of Federal Regulations (CFR) Parts 1500–1508, NPS Director’s Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* (NPS 2011) and the accompanying handbook (NPS 2015a). Compliance with section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, is being conducted concurrently with the NEPA process.

Purpose of and Need for Action

The purpose of this project is to establish a Potomac River recreation zone that more fully supports nonmotorized recreation; increases the public’s access to the river; improves functionality of the Capital Crescent Trail (CCT) as it connects to Georgetown Waterfront Park; and respects the historic character, natural resources, and existing recreational use of the C&O Canal NHP and Rock Creek Park.

Nonmotorized boating facilities are needed in Georgetown because:

- public access points for nonmotorized boating and paddle sports are limited along the Georgetown waterfront, and the popularity of nonmotorized water sports (e.g., canoeing, kayaking, rowing, and paddle boarding) has been increasing;
- capacity at current boathouse facilities that provide access to the river and related amenities (i.e., boat storage, concessions, access facilities, boat rentals, beach, and docks) is insufficient; and
- the current configuration of the CCT and its connection to Georgetown does not provide safe and compatible access for pedestrians and cyclists as they move to and through the zone.

Project Background

PROJECT HISTORY

The nonmotorized boathouse zone was established as part of the Georgetown Waterfront Park Master Plan, which was approved and adopted in 1987, for Georgetown Waterfront Park and C&O Canal NHP (Georgetown Sector). The plan designates a general area of land within which new boathouses and river access can be built along the Potomac River in Georgetown. The zone (figure 1) is bounded on the south by the Potomac River shoreline and includes a segment of Rock Creek Park between the Potomac Aqueduct Bridge abutment, colloquially known as the Alexandria Aqueduct, and Georgetown Waterfront Park and a segment of the C&O Canal NHP upstream of the Alexandria Aqueduct. The eastern, or

downriver, boundary of the zone is at 34th Street NW. The western, or upriver, boundary of the zone is approximately 1,100 feet upstream of the Francis Scott Key Bridge (Key Bridge). The northern boundary of the zone is the northern edge of the Water Street NW right-of-way, east of the Alexandria Aqueduct, and the northern edge of the CCT right-of-way, west of the Alexandria Aqueduct. The western limit reflects an NPS policy to preserve the natural appearance of the Potomac Palisades. Several privately owned parcels are located within these boundaries: Potomac Boat Club, three townhouses, and a small parcel without street access that is located inside the NPS-managed parcel currently at the site of the Key Bridge Boathouse concession.

Current uses of the river adjacent to the zone include two parallel race courses for canoeists and rowers. The canoe course is immediately offshore, and the rowing course is farther out in the river. Cycling is prevalent along the CCT through Water Street NW and includes a large number of commuters. Conflicts between cyclists and nonmotorized boat use are most prevalent during boating events when the area along Water Street NW is used as a staging area for regattas.

Following approval of the Georgetown Waterfront Park Master Plan, NPS and other interested parties released a number of studies focused on the development of facilities within the nonmotorized boathouse zone. Studies included specific boathouses for the Georgetown University and George Washington University rowing programs; however, previous compliance efforts and studies are separate from this EA. Previous studies document the growing interest first in rowing, and more recently in other paddle sports on the Potomac River and the Anacostia. The boathouses for the universities were never built, and the environmental studies were never completed. These previous studies include:

- Survey of Non-motorized Boating Activities along the Georgetown Waterfront (NPS 1985)
- Plan for the Georgetown Waterfront Park and the C&O Canal NHP (NPS 1987)
- Special Study: Nonmotorized Boating in the Potomac and Anacostia Rivers, Washington, DC (NPS 1989)
- Environmental Assessment for the Proposed Exchange of Properties between the National Park Service and Georgetown University within the District of Columbia and within the Boundary of Potomac Palisades Park within the Chesapeake & Ohio Canal National Historical Park (NPS 1995a)
- Memorandum of Agreement between the National Park Service, the District of Columbia Historic Preservation Officer, and the Advisory Council on Historic Preservation (NPS 1997)
- Draft Supplemental Report: Non-motorized Boating on the Potomac River in Georgetown (NPS 2000)
- Facility and Site Analysis for a Boathouse on the Potomac River in Arlington County (NPS 2002)
- Georgetown University Boathouse Environmental Assessment (NPS 2006a)
- Draft Environmental Impact Statement—Proposed Land Exchange and Georgetown University Boathouse (not published) (NPS 2008a)
- Nonmotorized Boathouse Zone Feasibility Study (NPS 2013)

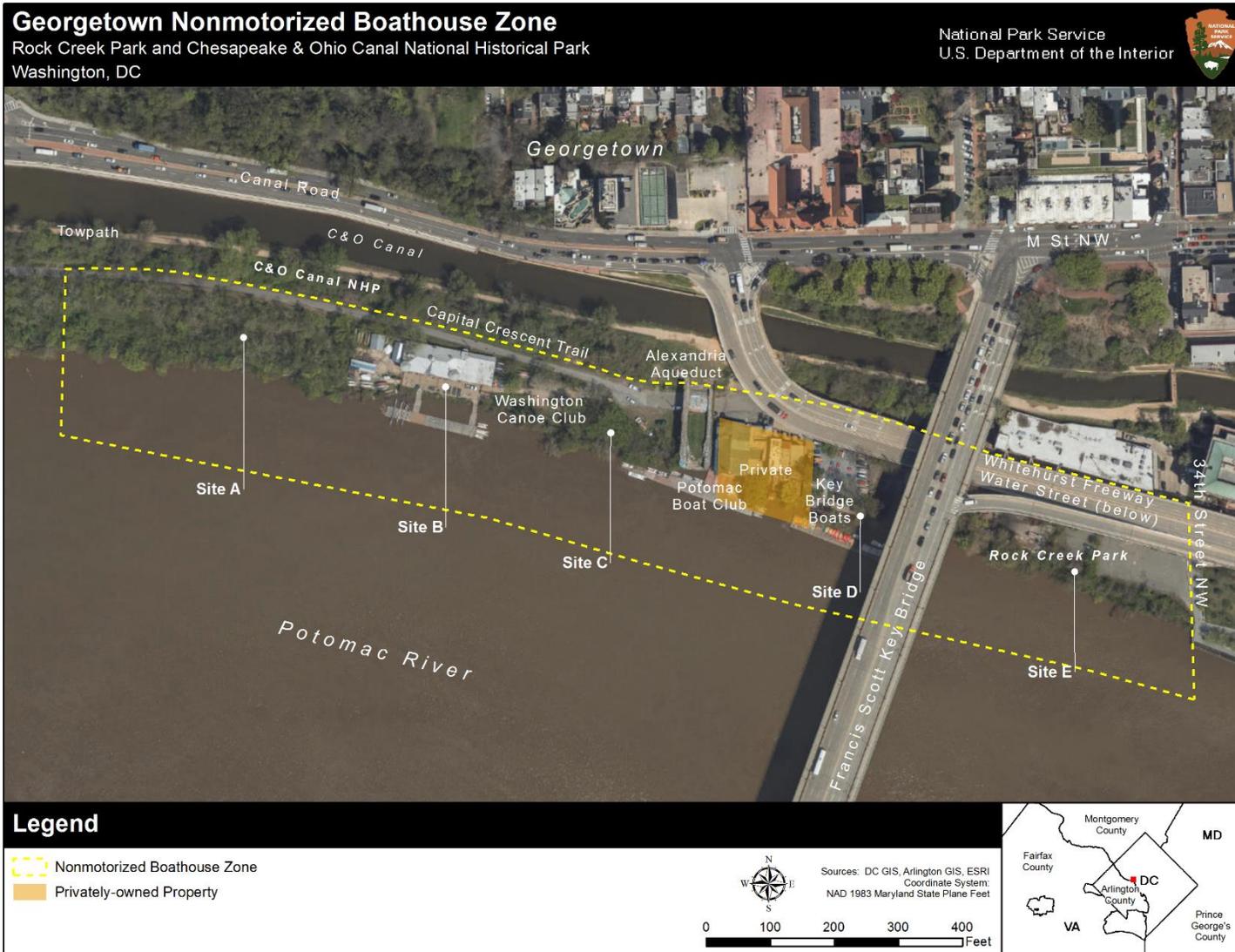


FIGURE 1. THE NONMOTORIZED BOATHOUSE ZONE

PROJECT AREA

The nonmotorized boathouse zone extends 80 to 100 feet landward from the shoreline and includes approximately 1,500 feet of river frontage; it has a total area of 126,753 square feet (SF) of land. The zone extends far enough into the river to accommodate docks or bulkheads associated with any proposed facilities. The CCT follows a 40-foot easement on the northern boundary of the zone that narrows to 30 feet near the Washington Canoe Club. Both Key Bridge and Whitehurst Freeway are elevated facilities that cross over the zone, and the Whitehurst Freeway is elevated over Water Street (figure 1). The project area also includes Water Street between 34th Street NW and the Alexandria Aqueduct.

Regulatory Environment and Related Laws, Regulations and Plans

Several laws, regulations, executive orders, and management plans, as well as the NPS *Management Policies 2006* (NPS 2006b), would affect implementation of the proposed project and inform the NEPA analysis. Laws governing floodplains, disturbance of waterways, protection of cultural resources, and erosion and sediment control inform the development of the alternatives, assessment of impacts, and how the project would be implemented. Where appropriate and necessary, laws, regulations, policies, and governing plans are cited throughout the document.

Planning Issues and Concerns Retained for Detailed Analysis

Issues describe problems or concerns associated with current impacts from environmental conditions or current operations as well as problems that may arise from the implementation of the alternative. The following text describes issues that were raised during scoping for the project and organizes them by the topics under which these issues are addressed in the “Affected Environment” and “Environmental Consequences” sections of this EA.

WATER RESOURCES

- Construction of the new facilities, reconfiguration of streets, and paved parking in the nonmotorized boathouse zone would increase impervious surface areas and could affect water quality by increasing runoff that carries accumulated sediments and pollutants. New construction in the zone would require implementing stormwater management practices that would be incorporated into the design to minimize adverse effects on water quality. Stormwater management practices would be consistent with the Energy Independence and Security Act (EISA) of 2007 and the District of Columbia’s *2013 Rule on Stormwater Management and Soil Erosion and Sediment Control*. Details regarding specific practices would be decided at the design stage of the project.
- The project area is immediately adjacent to the Potomac River, in a 100-year floodplain. Development of new facilities in the nonmotorized boathouse zone could alter floodplain functions and values. Additional impervious surfaces and structures could also affect floodplain functions and values in the area, alter flood flows, and possibly alter the base flood elevation. A Statement of Findings for floodplains is provided in appendix C and is being circulated for public review and comment with this EA.
- The project area contains wetlands, including a 0.6-acre palustrine wetland in site A and riparian wetlands that could be affected by construction on the shoreline. While wetland impacts would be avoided to the greatest extent possible, development of facilities in the project area could affect wetlands through disturbance, fill, or discharge of sediment-laden runoff during construction; shading of wetland vegetation by new facilities after construction; or other disturbances. Although none is currently present, the potential exists for submerged aquatic vegetation (SAV) that could be adversely affected by sedimentation or could benefit from removal of shoreline trees that prevent sunlight penetration into nearby shallow water habitat.

HISTORIC DISTRICTS AND STRUCTURES

- The project area is within two historic districts, and both the project area and immediate surrounding areas contain several properties listed or eligible for listing in the National Register of Historic Places (NRHP). The NHPA (54 United States Code 300101, et seq.), NEPA, the Organic Act, NPS *Management Policies 2006* (NPS 2006b), Director's Order 12 (NPS 2011), and Director's Order 28: *Cultural Resources Management Guideline* require that impacts on any cultural resources that might be affected be considered. The NHPA, in particular, requires that impacts on cultural resources either listed or eligible to be listed in the NRHP be considered. Cultural resources include historic structures and districts, cultural landscapes, archeological resources, ethnographic resources, and museum collections (prehistoric and historic objects, artifacts, works of art, archival documents, and natural history specimens). Impacts on historic structures and districts are possible. Changes to properties within the zone have the potential to affect all of the historic resources in and near the project area through the introduction of new structures, changes in views and vistas from or into the zone, and potential disturbance of subsurface artifacts.

LAND USE AND ADJACENT PROPERTIES

- Privately owned property, namely the Potomac Boat Club and three townhouses, exist inside the boundaries of the zone, but are not included in the plans for the zone. In addition, privately owned properties are present on the north side of Water Street NW, adjacent to the zone. These properties would be affected by proposed changes to the zone, including transportation configurations. Potential impacts include conflicts between private landowners and public use of adjacent properties and increased challenges for private landowners to access their properties.

TRANSPORTATION

- Development of new boathouse facilities that would bring new users to the zone and reconfigure Water Street NW would help to resolve ongoing vehicular, pedestrian, and cycling conflicts. The development of the facilities and reconfiguration of Water Street NW would improve bicycle and pedestrian facilities, standardize traffic patterns, reconfigure and result in a small reduction of on-street parking, displace bus parking, and limit access by large trucks and buses because of a reduced vehicular turning area. More users would increase pedestrian, bicycle, and traffic volumes on Water Street NW and surrounding roads and would increase parking demands and access demands for trucks and buses. An increase in users could lead to capacity or congestion issues for select portions of some transportation facilities.

VISITOR USE AND EXPERIENCE

- Development of the facilities would rearrange current use patterns focused on Thompson Boat Center (Thompson's), introduce new opportunities for using the river, increase the number of visitors to the area, and increase the variety of activities in which visitors are engaged. More visitor use could create the potential for increasing conflicts between users, specifically rowers, paddlers, and cyclists on the CCT.

Issues Dismissed from Further Analysis

The following issues, discussed under the topics where they are usually addressed, were raised during scoping and were eliminated from further analysis in this EA. A brief rationale for dismissal is provided for each topic. Potential impacts on these resources would be limited, localized, and in many cases immeasurable.

SOILS AND TOPOGRAPHY

- Development of the facilities would require cut and fill and grading activities, which could affect soil resources by removing, compacting, and covering them with development. Soils in the project area are classified as urban land soils that have been disturbed through previous construction activities and civil works (NRCS 2016). Consistent with its construction fill origins, the site is generally flat with a few low areas on the western end and a relatively steep embankment with riprap shoreline stabilization west of the Alexandria Aqueduct. The topography of Georgetown Waterfront Park is predominately flat and paved along the Potomac River. Much of this topography is the result of existing development in the area. North of Water Street NW, the land slopes gently upward along Wisconsin Avenue and other streets that run parallel to Wisconsin Avenue NW (NCPC 1999). Construction activities through this initiative would involve minimal grading and building on piles, causing minimal disturbance to the previously disturbed urban soils. Mitigation measures through an erosion and sediment control plan would also offset any adverse impacts. Parts of the project area may benefit from the addition of new topsoil to support landscaping. This issue was therefore dismissed from detailed analysis.

VEGETATION

- Some vegetation (i.e., trees, turfgrass, and ground cover) may be disturbed or removed during the construction of new facilities. Some vegetation removal would be permanent. Other areas would be landscaped or replanted as possible, depending on the final design. Any trees removed would be replaced with native trees in the project area or within 1,000 feet of the project area boundary. Existing vegetation was assessed in a previous study and is reported to consist of species typical of disturbed sites, including both herbaceous plants and trees (NPS 2013). Flooding and ice dams occur periodically and destroy forest cover in this landscape; therefore, new colonizing species and young trees are typical. Much of the vegetation documented in the previous study includes nonnative invasive species. Impacts on vegetation would therefore be relatively minimal because of the condition of the vegetation, the ability to add landscaping (i.e., ground cover and shrubs) to remaining open areas, and the emphasis on site landscaping and tree replacement. Therefore, vegetation has been dismissed from further consideration. Impacts on wetland vegetation are discussed in the “Water Resources” section of chapters 3 and 4 of this EA.

FISH AND WILDLIFE

- Development of facilities could disturb habitat for terrestrial and aquatic species from clearing and grading activities, construction noise, and shading of aquatic habitat beneath floating docks. Half of the project area is in a more urban environment, with negligible habitat value. The other half of the project area is in a more pastoral environment in the C&O Canal NHP, with a mix of turfgrass and some trees, with limited habitat value relative to the portion of the C&O Canal NHP immediately west of the zone. Wildlife species in this area are mostly urban wildlife species, such as deer, raccoon, fox, and rodents, and disturbance would be limited. Few long-term impacts would occur related to the introduction of more people into the project area because the area is already well-travelled with the terminus of the CCT occurring in the zone. Habitat restoration in some parts of the project area could provide

benefits. Although construction-related activities may temporarily displace wildlife from the area, the action alternative would not result in more than minimal effects on wildlife or wildlife habitat. Because of the area's urban context, the level of human activity, and minimal habitat value, wildlife was dismissed from further detailed analysis.

- The potential use of sheetpiles to construct bulkheads at sites D and E may result in noise-related impacts on two species of federally listed endangered sturgeon and several subpopulations—the shortnose sturgeon (*Acipenser brevirostrum*) and the Atlantic sturgeon (*Acipenser oxyrinchus*)—that may be present in the Potomac River. US Fish and Wildlife Service (USFWS) multiyear surveys indicate that the species migrate through the project area (Kynard et al. 2007). Impacts on these federally listed species could consist of underwater noise from vibrating sheetpiling into place that may displace animals from feeding and resting areas and habitat modification as a result of shading from the docks. Sturgeon would not likely detect the small sediment plume generated by vibrating the sheetpiling into place. These potential impacts would be minimal and mostly temporary because of (1) the short duration of sheetpile vibrations (approximately two weeks for the bulkheads); (2) the limited area where impacts could occur (the shoreline where sheetpile driving would occur is approximately 530 feet long); (3) the fact that vibrating sheetpiles into place would produce a minimal amount of noise; (4) the area shaded by the docks would be minimal compared to all other habitat available to the sturgeon; and (5) sturgeon are mobile and could avoid the area during times of underwater noise-generating activities. Therefore, the issue of potential impacts on threatened and endangered species was dismissed from further analysis. NPS submitted a determination of “may affect, not likely to adversely affect” federally listed threatened and endangered species to the National Oceanic and Atmospheric Administration, National Marine Fisheries Service in compliance with the requirements of section 7 of the Endangered Species Act (1973) on June 3, 2016.
- The proposed project could affect the northern long-eared bat (*Myotis septentrionalis*), listed in May 2015 as threatened under the Endangered Species Act. Although this species did not show up during the online consultation with USFWS's IPaC service, the project area is within its range and contains mature trees and snags that are potential habitat for this species. No known roost trees are in the project area, and no impacts on the northern long-eared bat are anticipated because tree removal for construction would be limited to the late fall or winter after bats return to their hibernacula.

CULTURAL RESOURCES (ARCHEOLOGY)

- Because of a long history of development and occupation of the land in the zone, archeological resources in the project area could be affected. A Phase 1A archeological evaluation that included taking soil cores was completed in the project area in 2015 (NPS 2015b). The survey determined that the likelihood that archeological resources could be disturbed in most of the project area is very low. While the potential for archeological resources exists at site A, soil cores indicated these resources are at least 6 feet below the surface, and the proposed facilities in this area would not require disturbance to that depth. Archeological resources were therefore dismissed from further analysis.

SOCIOECONOMICS

- Revenue to the city could potentially change from the loss of metered parking on Water Street NW, and the socioeconomic texture of the area around the project area could change. Under the action alternative, the number of parking spaces within the zone likely would change. However, because none of these parking spaces are metered, parking revenues within Washington, DC, would not be affected. Additionally, it is possible that additional visitors

who are drawn to the area as a result of the action alternative would spend their income at local businesses. This spending would positively affect local businesses in the long term as a result of increased income and sales, although short-term, adverse effects on sales could occur during construction if people avoid the area. No other socioeconomic issues are likely to occur as a result of the action alternative. Therefore, the topic of socioeconomics was dismissed from further analysis.

ENVIRONMENTAL JUSTICE

- The project could affect minority and/or low-income populations located near the project area. Executive Order 12898, “General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. According to the US Environmental Protection Agency, environmental justice is the

...fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

The goal of “fair treatment” is not to shift risks among populations but to identify potentially disproportionately high and adverse effects and to identify alternatives that may mitigate these impacts.

Although communities surrounding the project area contain both minority and low-income populations, environmental justice was dismissed as an impact topic for the following reasons:

- The park staff and planning team actively solicited public participation as part of the planning process and gave equal consideration to all input from persons regardless of age, race, income status, or other socioeconomic or demographic factors.
- Implementation of the action alternative would not result in any identifiable adverse human health effects. Therefore, there would be no direct or indirect adverse effects on any minority or low-income population.
- Implementation of the action alternative would not result in any identified effects that would be specific to any minority or low-income community.
- The impacts associated with implementation of the action alternative would not disproportionately affect any minority or low-income population or community.

INDIAN TRUST RESOURCES

- Secretarial Order 3175 requires that any anticipated impacts on Indian trust resources from a proposed project or action by US Department of the Interior agencies be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal law with respect to American Indian and Alaska Native tribes.

No Indian trust resources are located in the Washington, DC, area. The lands in the project area are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. As a result, the impact topic of Indian trust resources was dismissed. However, NPS intends to send a letter to the Delaware Nation requesting input and comments regarding any possible sites of religious or cultural significance that could be affected by the proposed rehabilitation project.

This page intentionally left blank.

CHAPTER 2: ALTERNATIVES

Introduction

NEPA requires federal agencies to explore a range of reasonable alternatives aimed at addressing the purpose of and need for the proposed action.

Two alternatives are analyzed in this EA as follows:

- Alternative 1: No-action alternative
- Alternative 2: Develop Nonmotorized Boathouse Zone

Alternatives that were considered but were not technically feasible, did not meet the purpose of and need for the project, created unnecessary or excessive adverse impacts on cultural or natural resources, and/or conflicted with the overall management of the park or its resources were dismissed from further analysis and also are described in this chapter.

Descriptions of Alternatives

ALTERNATIVE 1: NO-ACTION ALTERNATIVE

Under the no-action alternative, no new facilities would be constructed in the nonmotorized boathouse zone, and capacity for nonmotorized boating on the Potomac River in Georgetown would remain the same with most rowers (i.e., university and high school students, individual rowers, and rowing groups) using Thompson's. Other rowers would continue to use the private Potomac Boat Club. Washington Canoe Club would remain in operation, serving paddlers who are members of the club, and negotiations concerning the use and renovation of the building in which the Washington Canoe Club is housed would continue. The concession currently known as Key Bridge Boathouse would continue in its current configuration, providing public rentals of kayaks, canoes, and paddleboards. The site east of Key Bridge and the space immediately under the bridge would remain unimproved and would continue to serve as a storage yard for the city (figure 2).

The CCT would still terminate at the Alexandria Aqueduct, and potentially dangerous conflicts because of the abrupt trail termination and lack of wayfinding for cyclists, motorists, and pedestrians would persist. Additionally, motorists unfamiliar with the area who use electronic mapping directions would continue to contribute confusion to the area because these directions assume that drivers are on the elevated road above. Although the C&O Canal NHP has installed a gate at the Alexandria Aqueduct, motorists still try to push through the gates, and wayfinding along Water Street NW is inadequate to provide direction to the wayward motorists.

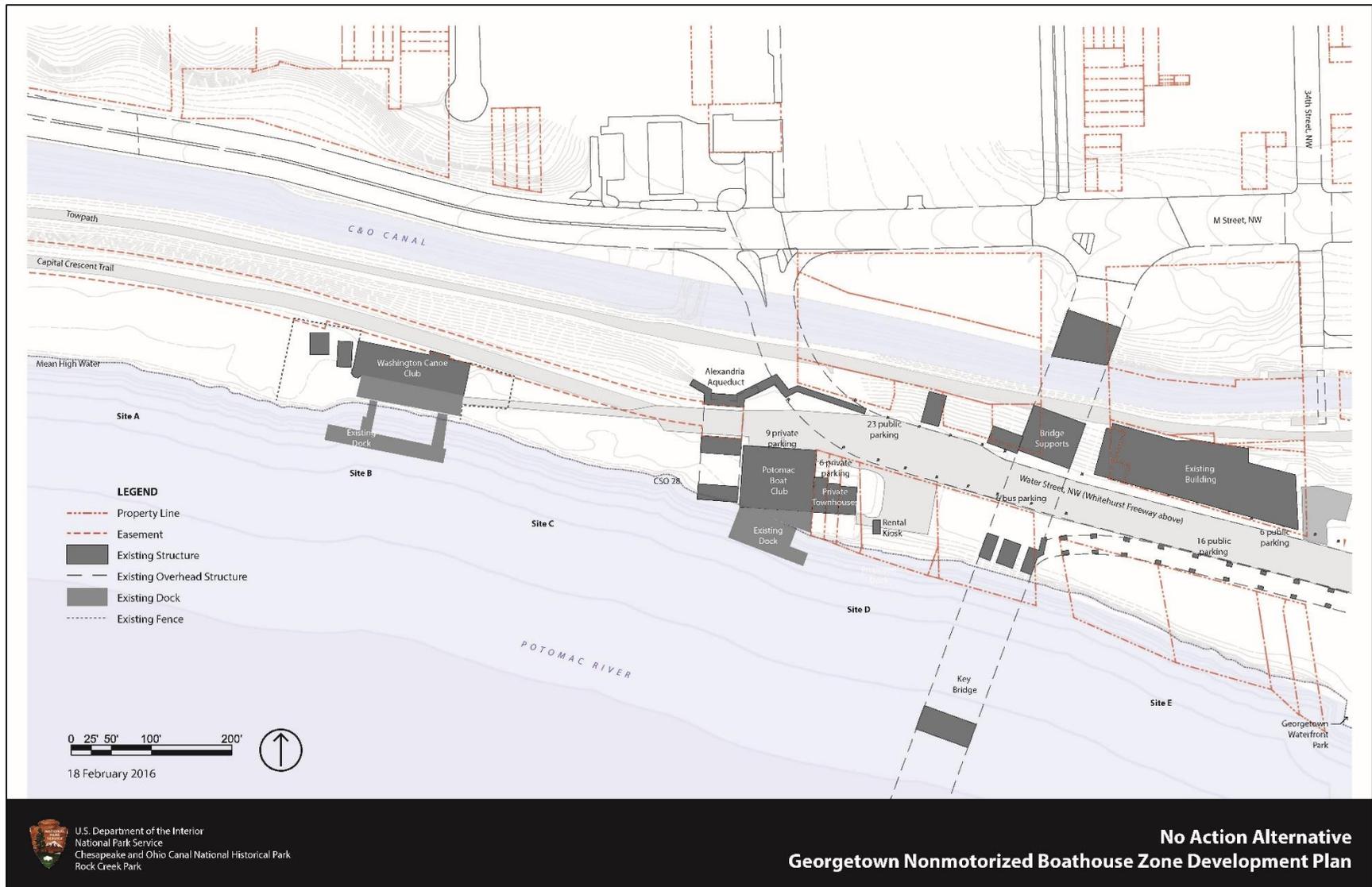


FIGURE 2. ALTERNATIVE 1: NO-ACTION ALTERNATIVE

ALTERNATIVE 2: NONMOTORIZED BOATHOUSE ZONE

The action alternative is based on preliminary design and focuses on the appropriate buildable area for each zone and how that area could be used to provide access to favorable flat water conditions for nonmotorized boating and improve on-shore amenities. The action alternative allows phased development of nonmotorized boating facilities for both rowing programs and recreational paddlers, while providing planning flexibility in future size, placement, and design of these facilities.

The zone has been divided into five sites with sites A–C west of the Alexandria Aqueduct in the C&O Canal NHP and sites D and E east of the Alexandria Aqueduct and the Potomac Boat Club. Sites D and E sit on land administered by Rock Creek Park (figure 3). Overall, the implementation of this alternative would be phased, most likely starting with sites D and E. A summary of the proposed improvements to sites A–E is provided below, with more details provided in table 1 and an illustration of the massing for the facilities provided in figures 4 through 7.

- **Site A:** Site A would include shoreline improvements, a sloped shoreline launch for canoes/kayaks/paddleboards, a picnic area that could include tables and grills or other amenities, and a trail/boardwalk through the site. Based on future need, site development may include the option of constructing a small, single-story boat storage area with a footprint of no greater than approximately 2,700 SF.
- **Site B:** The Washington Canoe Club and its facilities are located within site B. The only actions proposed on this site would include general site restoration, rehabilitation of the structure, reconfiguring or removing the fenced yard, altering the authorized access driveway so that it services the facility, and providing controlled public access across the Washington Canoe Club apron to site A.
- **Site C:** Site C would provide a canoe/kayak rental/storage facility that could be one single structure or multiple smaller structures. The total facility footprint would be no greater than approximately 6,000 SF with no more than two stories and a maximum height of 35 feet. The size of the adjoining public apron and dock would be commensurate with the ultimate size of the new facility or facilities, but not longer than 300 feet.
- **Site D:** The primary configuration of the boathouse facility at site D assumes that the privately owned townhouses would remain in private ownership and be excluded from the nonmotorized boathouse zone. Therefore site D would include the construction of a smaller boathouse with an approximate footprint of 3,600 square feet (possibly up to 4,200 square feet, although a boathouse that size would restrict boat maneuverability in the plaza), a dock up to 150 feet long, a plaza, and ground-level boat storage. Both the dock and plaza areas would be accessible to the public except during permitted events (i.e., regattas and team practices). The proposed boathouse could be designed for a maximum height of 45 feet or up to three stories. If the townhouses were to become available for inclusion in the project at some point in the future, options for a larger boathouse (7,200 SF) on that site, with the public plaza shifted to the west, could be considered.
- **Site E:** Site E would include construction of a large boathouse with a footprint of up to approximately 13,800 SF, with a dock up to 300 feet long, ground-level storage, and plaza areas. Both the dock and plaza areas would have public access except during permitted events (i.e., regattas and team practices). Treatments and configurations for Water Street NW and links between the CCT, the street, and Georgetown Waterfront Park would include drop-off and temporary storage areas for car-top users to leave their boats while they park on Water Street NW or in a parking garage. The site would also include an apron with vehicular access from Water Street NW at 34th Street NW and a public plaza/apron with dock access at the west end of the boathouse.

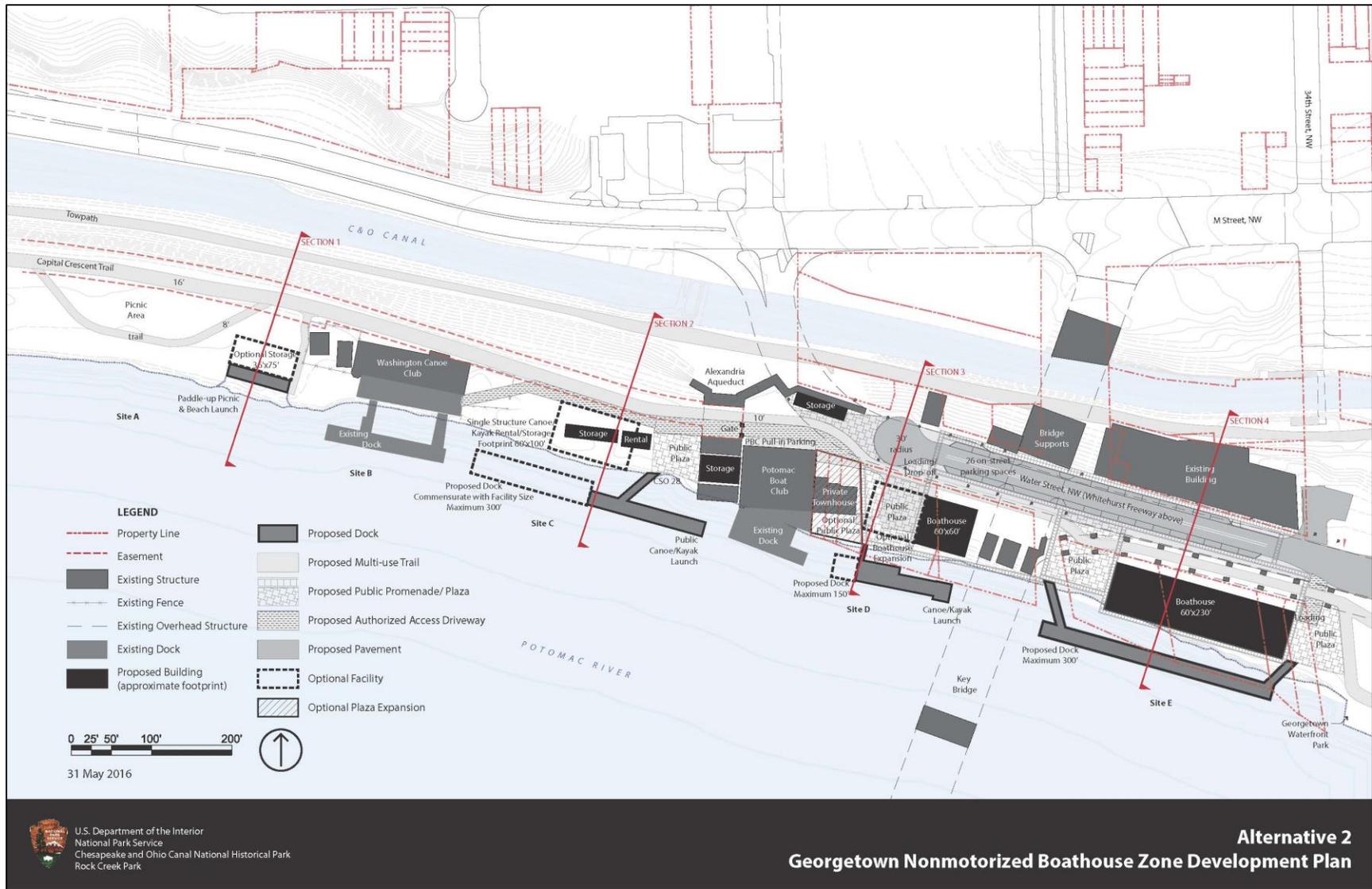


FIGURE 3. ALTERNATIVE 2

TABLE 1. DETAILS OF ALTERNATIVE 2

Alternative 2: Nonmotorized Boathouse Zone	
Rowing program support	<ul style="list-style-type: none"> • Site C: Up to ~6,000 SF second floor • Site D: Up to ~3,600 SF to ~4,200 SF second floor • Site D: Up to ~3,600 SF to ~4,200 SF third floor • Site E: Up to ~13,800 SF second floor • Site E: Up to ~13,800 SF third floor
User Amenities	<ul style="list-style-type: none"> • Self-serve lockers for car-top drop-off on Water Street NW across from Potomac Boat Club (approximately 36 lockers) • Potential rental racks at site A (approximately 42 racks) • Soft entry kayak launch (walk-in or rental only) (site A) • Dock entry kayak launch (site C) • Self-serve storage (site C) • Car-top launch drop-off and lockers at Water Street NW • Public restrooms (site C) • Picnic area (sites A and C) • Trail/boardwalk (site A) • Separated multiuse trail on Water Street NW • Restricted access driveway for service and emergency vehicles (sites A, B and C) • Seasonal outdoor boat storage • Public plaza/deck
Shoreline	<ul style="list-style-type: none"> • Shoreline improvements (i.e., remove riprap, debris, and near-shore sediments; create a natural shoreline profile; restore alluvial bench vegetation; improve near-shore habitat; and stabilize natural beach entry kayak launch [site A, and possibly site C]) • Minor shoreline fill and limited bulkhead construction and piles to accommodate boathouse construction (sites E, D, and possibly C) • Possible excavation of first floor by 2 to 3 feet at sites D and E below current grade to reduce height above mean low water level and ramp length
Alexandria Aqueduct	<ul style="list-style-type: none"> • Viewing terrace on top • Boat storage under archway (approximately 20 racks)
Vehicular Access C&O Canal NHP	<ul style="list-style-type: none"> • Authorized vehicles only beyond the Alexandria Aqueduct via NPS driveway (10 feet wide) • Gate at the Alexandria Aqueduct
Vehicular Access Water Street	<ul style="list-style-type: none"> • Street section: <ul style="list-style-type: none"> - Two travel lanes - 26–36 metered parallel parking spaces (depending on curb cuts and final design) - 30-foot radius cul-de-sac • Public plaza/apron with limited loading on site C • Public plaza/apron with designated loading zone on site D between existing townhouses and proposed boathouse • Public plaza/apron with designated loading zone at 34th Street NW • Short-term drop-off storage for car-top paddle craft for use while visitors park or retrieve their vehicles (includes potential for some of this storage to be longer term) • Traffic calming pavement design similar to Georgetown Waterfront Park materials to minimize conflicts between uses within congested loading zones
Multiuse Trail	<ul style="list-style-type: none"> • CCT transitions to 10-foot wide east of the Alexandria Aqueduct and continues on south side of Water Street NW between Whitehurst Freeway columns, connecting to Georgetown Waterfront Park • Shared bike lanes in Water Street NW with transition between trail and cul-de-sac
Parking	<ul style="list-style-type: none"> • Parking required for boathouses may be provided on-street or in local garages; 26–36 on-street parking spaces on Water Street NW provided, with short-term drop-off parking in the cul-de-sac

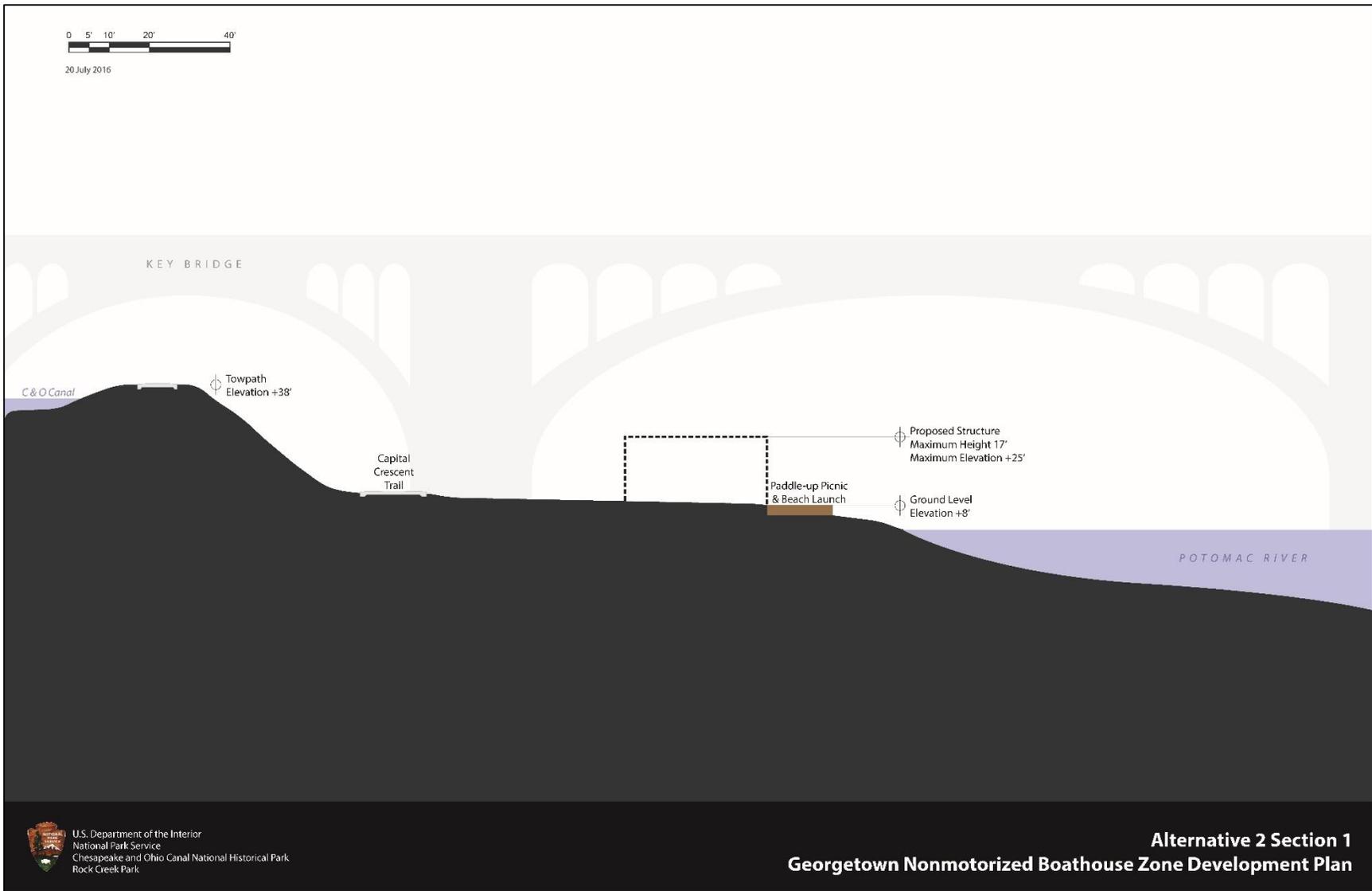


FIGURE 4. CROSS-SECTION AT SITE A

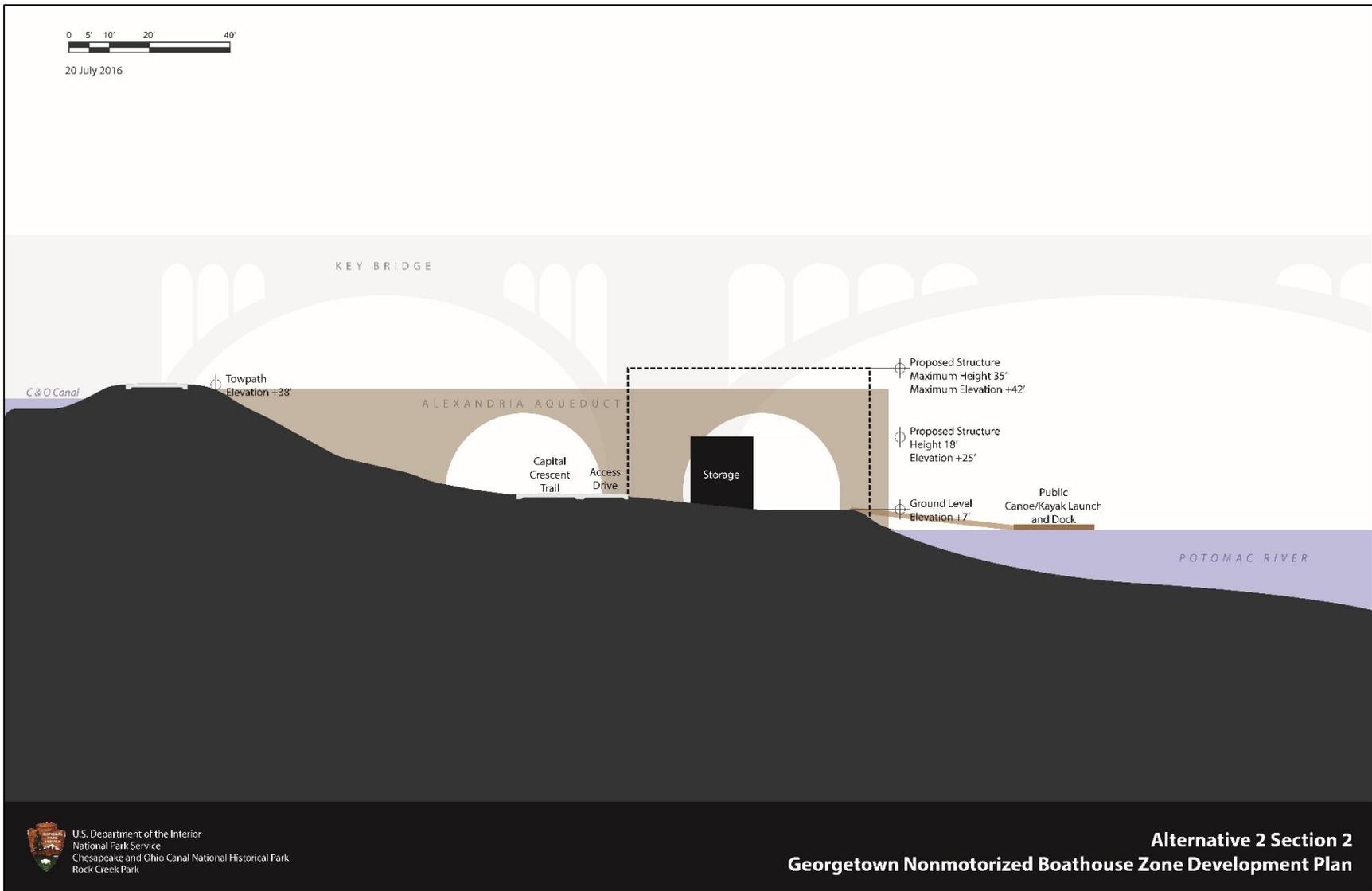


FIGURE 5. CROSS-SECTION AT SITE C

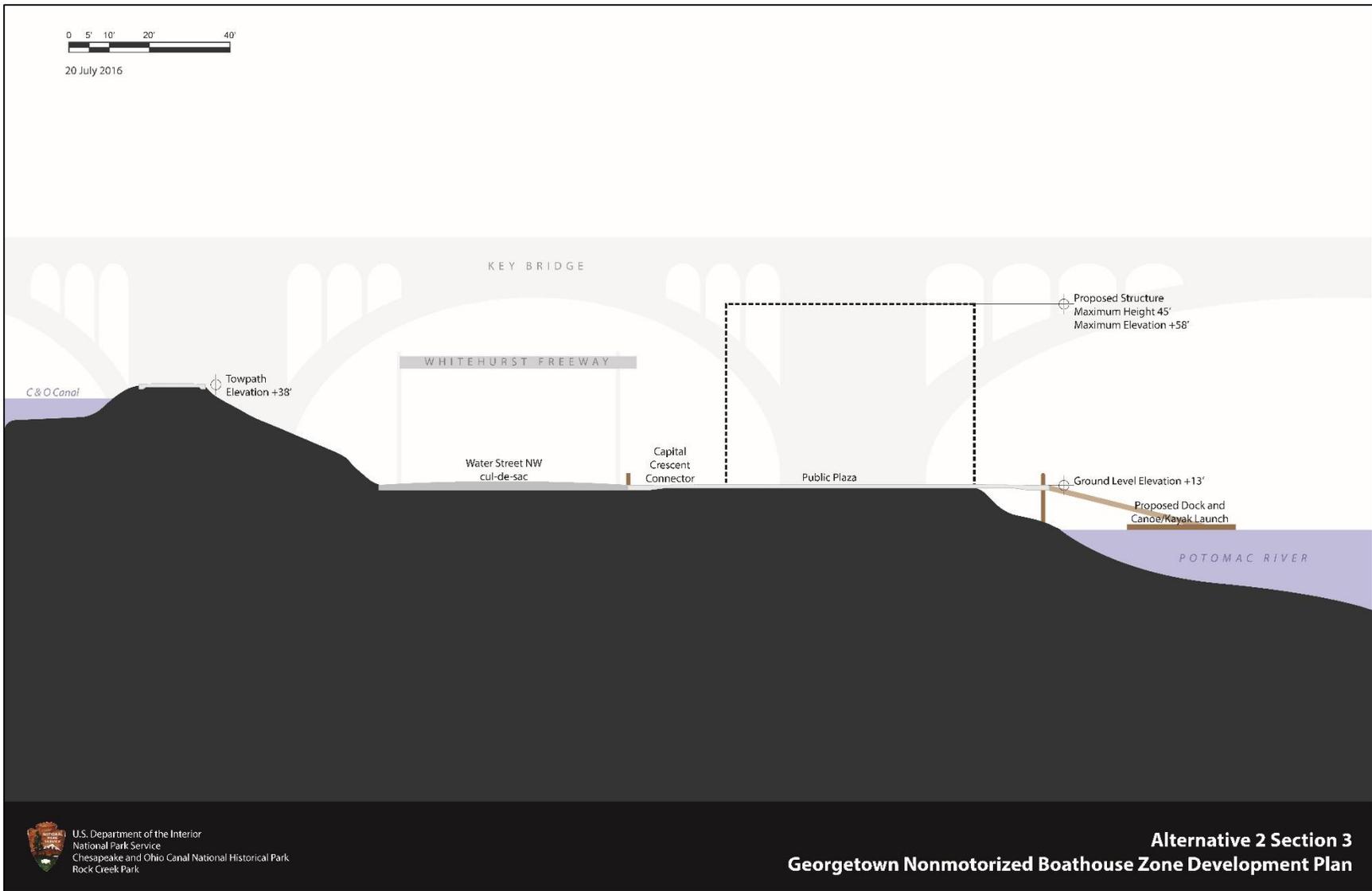


FIGURE 6. CROSS-SECTION AT SITE D

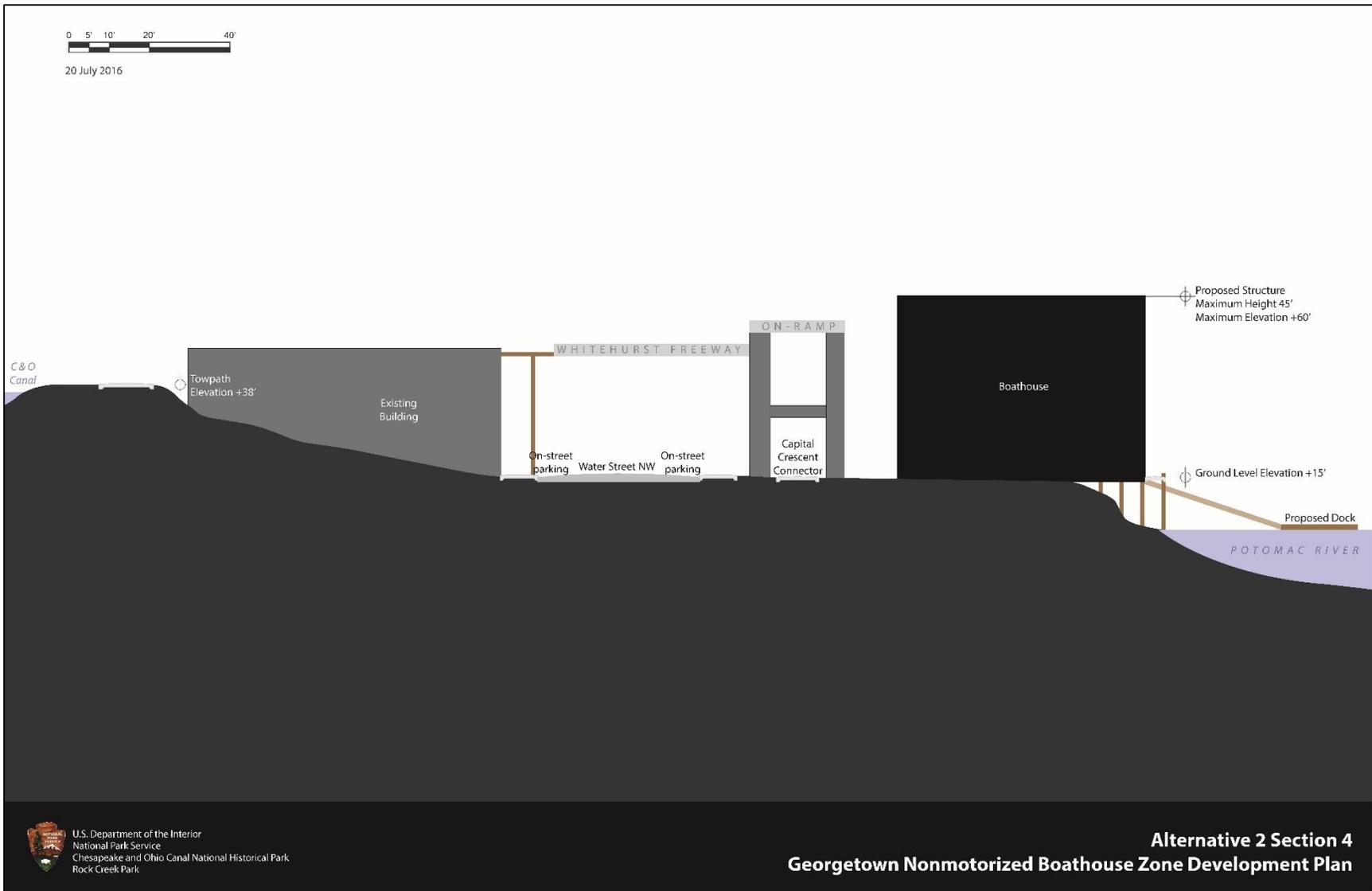


FIGURE 7. CROSS-SECTION AT SITE E

Other Improvements

Reconfiguration of Roadways and Trail. The reconfiguration of public spaces in relationship to the proposed new facilities and the street in site D would maintain and improve access to the townhouses, Potomac Boat Club, and Washington Canoe Club. The end of Water Street NW could feature a cul-de-sac constructed with a mountable curb, improved signage, and other wayfinding and use different pavement surfaces through the transition between the Alexandria Aqueduct and the cul-de-sac. Wayfinding improvements for motorists, cyclists, and pedestrians could include a variety of signage at the cul-de-sac and on the CCT and changes in pavement texture and/or color where transitions occur or potential user conflicts could arise. Details would be determined at design.

Parking. Between 26 and 36 on-street parking spaces would be made available on Water Street between 34th Street NW and the new cul-de-sac, depending on final design and need for curb cuts under the bridge and across from site E. Previously available public parking west of the cul-de-sac (approximately 25 pull-in unmarked spaces) would be lost and replaced with a kayak storage facility. Private parking for both the townhouses and Potomac Boat Club would remain.

Building Design Criteria. In compliance with Executive Order 11988, “Floodplain Management,” any new construction of structures or facilities approved to be located within the 100-year floodplain require acceptable flood-proofing and other flood protection measures. In addition, District of Columbia Municipal Regulation 21 stipulates that habitable spaces in buildings that are located in a floodplain must be located at least 1.5 feet above the minimum elevation of the 100-year floodplain. For this project, the proposed lower level boat storage would not be considered habitable.

The development of any facility within the nonmotorized boathouse zone, public or private, would be subject to local and federal laws and mandates and NPS policies regarding stewardship of natural resources, including:

- PL 110–140, EISA
- Section 303 of the Clean Water Act Chesapeake Bay Total Maximum Daily Load
- 2009 Executive Order 13508, “Chesapeake Bay Protection and Restoration”
- 2009 Executive Order 13514, “Federal Leadership in Environmental, Energy and Economic Performance”
- 2006 Federal Leadership in High-Performance and Sustainable Buildings Memorandum of Understanding including United States Green Building Council Leadership in Energy and Environmental Design requirements

These requirements include strict controls on stormwater management geared to protecting the Chesapeake Bay watershed, of which the Potomac River is a major component. Section 438 of the EISA outlines stormwater runoff requirements for federal development projects of more than 5,000 SF and specifies the use of strategies to maintain or restore predevelopment hydrology conditions. Both section 438 of the EISA and section 303 of the Clean Water Act (Total Maximum Daily Load requirements) are reviewed as part of the National Pollution Discharge Elimination System permitting process, which is required for sites with more than 1 acre of disturbance. Stormwater management within the nonmotorized boathouse zone is also regulated by the District of Columbia Department of Environment. In general, stormwater is required to be retained and treated on-site, necessitating that some portion of any development site be dedicated to stormwater control features. Given size limitations, the height of the water table, and the presence of underground utility lines, it is likely that stormwater management will require compact building footprints (to reduce impervious cover and runoff) and other space-efficient options (i.e., pervious pavements and roof drainage linked to subsurface storage). All efforts would be made to address stormwater management requirements using low-impact development practices before using more traditional practices. Preferred practices include pervious pavement on the new plaza areas,

converting some of the currently impervious area on sites D and E to semi-pervious with pervious pavement, and minimizing the effects of additional impervious surfaces on site C.

Nonmotorized Boathouse Zone Use and Management. Facilities in the nonmotorized boathouse zone could be managed in a variety of ways, which would be determined in the future. NPS would manage the zone and its facilities with the intent that all sites have some form of public access. However, it is possible and likely that institutions such as universities and high schools, may be permitted use of land or facilities in the zone, and some component of private use could occur. Institutional use could occur through a lease from NPS or rental of rack space from an NPS concession.

Institutions could also execute a land exchange with NPS, exchanging private land of equal value elsewhere for fee simple interest in a site. If the site were obtained through a land exchange, NPS could ensure some form of public access through covenants or deed restrictions. Land exchanges would be limited to sites D and E and may be subject to further NEPA/NHPA compliance. Development of any facilities on these sites after a land exchange would be subject to local zoning and development regulations.

Boat rental facilities in the zone, similar to the existing Key Bridge Boathouse on site D or Thompson's would likely be a concession contract with the NPS.

ALTERNATIVES CONSIDERED BUT DISMISSED

During the course of scoping, several alternatives were considered but deemed to be unreasonable and were not carried forward for analysis in this EA. Justification for eliminating these options from further analysis was based on the following factors:

- technical or economic feasibility
- inability to meet project objectives or resolve need
- duplication with other, less environmentally damaging or less expensive alternatives
- conflict with an up-to-date and valid park plan, statement of purpose and significance, or other policy, such that a major change in the plan or policy would need to be implemented

The following alternatives or alternatives elements were considered but dismissed for the listed reasons:

- **FOCUS ON ROWING-ONLY FACILITIES:** Earlier plans for the nonmotorized boathouse zone focused only on the expansion of rowing facilities and did not consider other nonmotorized watercraft. The 2013 feasibility study (NPS 2013) documented a growing interest in other nonmotorized boating disciplines, so a narrow focus on rowing facilities was determined to not address the current purpose and need for this project. Although one or more facilities within the zone may serve mostly rowers, facilities for a range of nonmotorized boating disciplines are now included throughout the zone in the action alternative.
- **AUXILIARY FUNCTIONS IN THE BOATHOUSES ON THE GROUND LEVEL:** This alternative element would allow for auxiliary functions such as rowing tanks or exercise or meeting rooms on the ground level of new proposed facilities. Although rowing tanks within boathouse facilities makes coaching efforts easier, limited space exists within the zone, and access to the waterfront in the zone must be maximized for as many user groups as possible. The tanks and other auxiliary functions on the ground level require more space and would potentially decrease the amount of the zone available to the public. In addition, ground level spaces are not considered habitable under floodplain regulations. Tanks would also not be compatible with floodplain regulations because they are not water-dependent uses and are not conducive to floodplain-friendly design.

- VARIOUS CONFIGURATIONS FOR THE WATER STREET NW STREETScape AND TRAIL ALIGNMENT:** Several configurations of the trail connection between the CCT and Georgetown Waterfront Park and placement of the cul-de-sac and other features to define the street on Water Street NW were considered and dismissed. To safely integrate the trail with the setting, placing the cul-de-sac farther east on Water Street NW at/or east of the Key Bridge and several alignments of the trail connection were considered. Of particular interest was how to best and safely align the connection with the support pillars for the overhead Whitehurst Freeway. The dismissed trail alignments presented dangerous angles or otherwise solved the transitional problems less effectively than options carried forward for analysis. Similarly, placing the cul-de-sac circle under the bridge rather than farther west on K Street provided design solutions that communicated less clearly to the user how space within Water/K Street NW between the cul-de-sac and the Alexandria Aqueduct should be used and provided less on-street parking than the option carried forward. Using a larger circle for the cul-de-sac was considered but determined infeasible because of the location of the support pillars for the Whitehurst Freeway and the toe of the levee embankment for the canal. These configurations of the street and trail connections all duplicated the option carried forward but created more environmental impacts and were therefore dismissed.
- SEPARATE ACTION ALTERNATIVES NOW CAPTURED IN THE CURRENT ACTION ALTERNATIVE (PREFERRED):** Originally, two action alternatives were under consideration. In those alternatives, the proposal for Water Street NW and for sites D and E were the same, differing only in the options for the sites west of the Alexandria Aqueduct. Because the only real differences were on sites A and C, these two alternatives were combined to make a single action alternative that includes options for more intense development on sites A, C, and D to reflect the two original action alternatives. The original alternatives have been dismissed from further analysis. It should be noted that the proposed boathouse for site C was larger in early versions of these alternatives (10,200 SF), but it was determined that such a large facility would not fit onto the site very well.

MITIGATION MEASURES FOR THE ACTION ALTERNATIVE

NPS places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. To help ensure the protection of natural and cultural resources and the quality of the visitor experience, the following protective measures would be implemented as part of the action alternative. NPS would implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are being properly implemented and are achieving their intended results.

Water Resources

Water Quality and Sediment and Erosion Control. Best management practices for erosion and sediment control (i.e., silt fencing and sediment traps) would be employed during and after construction and stabilization and revegetation strategies would be employed after construction is complete. As each facility is constructed, an erosion and sediment control plan would be prepared and implemented that conforms to the standards and specifications of the District of Columbia's Stormwater Rule and Soil Erosion and Sediment Control Handbook, which lays out the standards and specifications for sediment and erosion control (DDOE 2013a; DDOH 2003). Exposed soils would be covered during construction with plastic sheeting, jute matting, erosion netting, straw, or other suitable cover material to prevent soil erosion and movement during rain or wind events. Erosion and sediment control best management practices would be monitored during construction to ensure they are functioning properly and would be left in place until all disturbed sites are revegetated and erosion potential has returned to pre-project conditions.

Stormwater management practices would be designed and installed on the sites to meet the District of Columbia's Stormwater Management requirements (DDOE 2013) and section 438 of the EISA.

Wetlands. Filling the riverine wetlands behind proposed bulkheads would require mitigation, either through the restoration of other wetlands; establishment of new wetlands; or enhancement of wetlands, streams, or other aquatic resources. These mitigation measures would augment other habitats after all appropriate and practicable efforts have been made to avoid and minimize wetland impacts. The actual extent of disturbance and the details of the mitigation measures would be determined at design. For the purposes of the EA, the analysis considered a worst case scenario that included filling wetlands to the bulkhead line.

In the past, the US Army Corps of Engineers (USACE) has considered the palustrine wetland to be artificial, and therefore not jurisdictional. If USACE continues to consider the wetland non-jurisdictional, it may not require any mitigation for the wetland, and NPS would not likely require mitigation for disturbance to this wetland because these water-dependent activities would only disturb no more than 0.07 of an acre. Should unanticipated mitigation be required, the specifics would be determined at the time of design when the actual extent of disturbance is better defined.

Vegetation.

Although impacts on vegetation are not analyzed in detail, as noted in the discussion of issues in chapter 1, trees and vegetation removed during construction activities would be replaced in the project area or nearby at a 1:1 ratio. Details of how much or where vegetation would be replaced would be determined at design.

Final site restoration would include the revegetation or other surface treatment of areas previously disturbed by construction activities. NPS staff-approved native plant seed mixtures and plant materials would be used for rehabilitating and revegetating disturbed areas.

Cultural Resources

Impacts on historic structures or districts would be minimized by ensuring that development of the zone is conducted in a manner consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995d). If archeological resources were discovered during construction, all work in the immediate vicinity of the discovery would be halted until the resources can be identified and documented and an appropriate mitigation strategy can be developed. Consultation with NPS, and/or the NPS regional archeologist and the state historic preservation officer would be coordinated to ensure that the protection of the resources is addressed. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony were discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 United States Code 3001) of 1990, as amended, would be followed.

Rare, Threatened, or Endangered Species

To protect species of federally listed sturgeon that have been known to occur in the Potomac River, sediment curtains and coffer dams would be used to minimize adverse effects of increased sediment suspended in the water column. In-water activities would not occur between February 15 and July 1.

In addition, to protect the northern long-eared bat, removal of trees for construction would be limited to the winter from November through March.

Transportation

To reduce impacts on the transportation system resulting from the action alternative, mitigation measures are recommended for each mode of transportation analyzed if they are warranted. Mitigation measures for the action alternative with the options for sites C and D were used in this analysis because these options

represent the most intense development scenario. This scenario was analyzed in detail in the Transportation Impact Assessment (TIA) (included as appendix B).

Traffic or vehicular mitigation is recommended at five intersections, and other minor improvements are recommended for pedestrians, bicycles, transit, trucks and buses, and parking. Details on the recommended mitigations are provided in the TIA (appendix B).

Pedestrians. Accommodations, within existing constraints, have been made within the project area for pedestrians. As a result, no internal project area mitigations for pedestrians are recommended. Outside of the project area, the future developer(s) of facilities in the zone should work with the District Department of Transportation (DDOT) to study locations noted in both the “Affected Environment” section of this document and the TIA that do not meet the Americans with Disability Act or DDOT standards for ways to make improvements for pedestrians, particularly those locations that lead to the nearest transit facilities.

Bicycles. Given the additional congestion on the mixed-use path in the project area from both additional pedestrians and cyclists, signage or trail markings should be installed to guide usage of the trail (e.g., signage could remind cyclists to yield to pedestrians). Enforcement of posted signage and trail markings also is recommended. Design related recommendations for consideration if the action alternative is implemented are included in the TIA.

Outside of the project area, within the primary transportation study area and the 1-mile surrounding area, the future developer(s) of facilities in the zone should work with DDOT and with the appropriate entities to implement the improvements noted in the Georgetown Transportation Study, identify and fund improvements to alleviate the gaps and barriers noted in the “Affected Environment” section, and continue to work on the moveDC bicycle recommendations.

Trucks and Buses. Recommendations in the project area to mitigate adverse impacts include:

- Given the limited area to turn-around, post notices as far back on Water Streets NW as necessary to advise large trucks and buses not to proceed farther west because there is no area to turn around.
- Develop plans or guidelines for accommodating deliveries, trash trucks, and large vehicles and clearly communicate this information to all potential operators of such vehicles.
- Install signage to indicate the areas in the project area that trucks may access outside of the Water Street NW roadway and the cul-de-sac.
- Work with DDOT to study off-site bus parking locations to replace parking spaces for buses on Water Street NW that would be removed as part of the action alternative.
- Work with DDOT to determine the optimal location to load/unload high school and university students accessing the project area.

Traffic. Traffic mitigation measures primarily focus on those improvements needed to allow intersections within the larger secondary transportation study area to operate acceptably. However, to ensure traffic operations within the project area operate acceptably, the following improvements are recommended:

- Post signs as needed guiding vehicular use in the project area (e.g., no parking signs within the cul-de-sac, time limits to idling or unloading, no double parking).
- If needed, post signs along Water Street NW notifying users that the road does not provide an outlet.
- Work with DDOT to enforce parking and vehicle loading/unloading in the project area.

Recommended improvements to mitigate traffic impacts related to the implementation of the action alternative in the larger transportation study area include the following (more details on why these improvements are recommended are included in the TIA):

- M Street NW and Wisconsin Avenue NW (Intersection #2): Optimize the signal timing during the PM peak.
- K Street NW and 31st Street NW (Intersection #5): Signalize this intersection.
- K Street NW and 30th Street NW (Intersection #7): Signalize this intersection.
- K Street NW/Rock Creek Parkway southbound off-ramp and 29th Street NW (Intersection #8): No mitigations are recommended at this time for Intersection #8.
- K Street NW/Whitehurst Freeway eastbound off-ramp and 27th Street NW/Rock Creek Parkway northbound off-ramp (Intersection #9): Optimize the signal timing during all peak hours (weekday AM, weekday PM, and Saturday).
- Thompson Boat Center/Virginia Avenue NW and Rock Creek Parkway (Intersection #13): During the Saturday peak period, lane configuration changes to the westbound approach (i.e., add one right turn lane and change the through/right lane to a through-only lane) and signal phasing changes on the westbound approach. Note that the addition of a right turn lane for mitigation could affect parkland on the eastern side of Rock Creek Parkway. If parkland were affected, section 4(f) of the Department of Transportation Act of 1966 would need to be followed (FHWA n.d.).

This page intentionally left blank.

CHAPTER 3: AFFECTED ENVIRONMENT

This chapter describes existing environmental conditions in the areas potentially affected by the alternatives evaluated, including water resources (water quality, wetlands, and floodplains); historic structures and districts; land use; transportation (multiple modes of transportation, circulation, and parking); and visitor use and experience. Potential impacts are discussed in “Chapter 4: Environmental Consequences” in the same order the resources are presented here.

Water Resources—Including Water Quality, Wetlands, and Floodplains

WATER QUALITY

Potomac River

The project area is located in the Pimmit Run-Potomac River subwatershed, on the banks of the Potomac River. A variety of natural and urban influences affect water quality in the Potomac River. The river originates in primarily agricultural and forested land upstream but flows through the highly urbanized Washington, DC, region. The biggest threats to water quality in the region are increasing impervious surface cover in the watershed; loss of forests; runoff from crops and lawns that deliver nutrients, sediments, pathogens and bacteria, and other pollutants; and pathogens and bacteria from aging wastewater infrastructure, including combined sewer overflows (Ator et al. 1998; Potomac Conservancy 2016). The primary issues with water quality related to this project would be related to sedimentation, nutrients, and bacteria from possible runoff and any stormwater issues that would result in contributions to combined sewer overflows.

Nutrients

Although concentrations of nitrogen and phosphorous in the river are generally elevated above concentrations naturally occurring in the environment, in the majority of cases, elevated nutrient concentrations do not exceed drinking water standards, and thus do not pose a threat to human health or wildlife. The National Water Quality Assessment study found that ammonia concentrations in the Potomac River are generally low. Inorganic nutrients typically comprise a greater portion of total nitrogen and phosphorus concentrations than does the organic fraction of these nutrients, except during high flow conditions. Both agricultural and developed and urban land uses contribute nutrients to the Potomac River (MWCOC 2014; Ator et al. 1998). Nitrogen loads have been noticeably lower in the Potomac in recent years.

Bacteria

The Potomac River is a large river with a high assimilative capacity. The river has been listed as impaired for bacteria as a result of many factors, including stormwater runoff, agricultural input, and combined sewer overflows. A total maximum daily load has been developed (District of Columbia 2004) under the Clean Water Act. The implementation of stormwater plans and programs in the region and DC Water’s long-term control plan, also known as the Clean Rivers Project (DC Water 2002), should help reduce problems with bacteria in the Potomac River.

The Potomac River receives bacterial loading from a number of sources, including combined sewer overflows; direct inputs from wildlife, particularly waterfowl; and stormwater runoff that often contains pet and wildlife waste. Stormwater from the zone drains into the river or into combined sewers that ultimately discharge to the Potomac River. Both stormwater and sanitary waste are conveyed to DC Water’s Blue Plains Advanced Wastewater Treatment Plant downstream on the Potomac River. In heavy storms, the combined sewers can overflow, and overflow capacity is discharged to the Potomac River and its tributaries, affecting water quality.

There is a combined sewer overflow outfall in the project area at site C. In an effort to reduce overflow discharges by 96% by 2025, DC Water and the city are implementing the Clean Rivers Project, which includes construction of high capacity storage tunnels and low-impact development projects to reduce the volume of stormwater or capture it for filtration or reuse (DC Water 2014; District of Columbia 2012). One of these tunnels was proposed for underneath the project site, but its length has been shortened so that it will no longer pass underneath NPS land in the project area (DC Water 2016).

WETLANDS

Wetlands are areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (USACE 1987). As such, USACE requires areas dominated by hydrophytic vegetation, contain hydric soils, and display indicators of hydrology to be considered a wetland. The NPS definition of wetlands is similar to that of the US Environmental Protection Agency and USACE; however, it is broader than the USACE 404 permit program definition and therefore covers a broader range of wetland habitat types. NPS classifies wetlands based on the USFWS *Classification of Wetlands and Deepwater Habitats of the United States*, or the Cowardin classification system (Cowardin et al. 1979). Based on this classification system, a wetland must have at least one of the following attributes:

- The habitat at least periodically supports predominately hydrophytic (wetland) vegetation.
- The substrate is predominately undrained hydric soil.
- The substrate is nonsoil and saturated with water, or is covered by shallow water at some time during the growing season (Cowardin et al. 1979).

NPS Director's Order 77-1: *Wetland Protection* (NPS 2008b) directs NPS to use the USFWS definition and methodology as the standard for identifying, classifying, and inventorying wetlands when NPS actions have the potential to adversely affect wetlands. NPS also must comply with section 404 of the Clean Water Act when those actions involve the discharge of dredged or fill materials in wetlands or other "waters of the United States." As required by Director's Order 77-1, NPS must avoid adverse impacts on wetlands to the extent practicable, minimize any impacts that could not be avoided, and compensate for any remaining unavoidable adverse impacts on wetlands (NPS 2008b).

A wetlands delineation prepared for this project in 2016 found that the site west of the Washington Canoe Club contains approximately 0.60 acre of vegetated palustrine wetlands (figure 8) (Louis Berger 2016). A previous delineation of the area indicated that water leaking from the adjacent C&O Canal created this wetland; this finding was corroborated by USACE at the time (Schnabel Engineering 2005). The wetland is located in a wooded area that includes a number of tree and grass species and other vegetation (table 2). Because of the source of water for these wetlands, USACE previously determined that the wetlands are artificial and do not fall under its jurisdiction. It is possible that the wetland could decrease in size or dry up if the leak in the canal lining were addressed. Therefore, USACE stated it would not exert its regulatory authority under section 404 of the Clean Water Act. The USFWS "Wetland Mapper" shows no aerially detected wetlands at or in the vicinity of the project site. However, NPS must confirm the delineation and whether USACE still considers this wetland non-jurisdictional.

TABLE 2. WETLAND VEGETATION

Scientific Name	Common Name
<i>Acer negundo</i>	Ash-leaf maple
<i>Acer saccharinum</i>	Silver maple
<i>Cornus amomum</i>	Silky dogwood
<i>Fraxinus pennsylvanica</i>	Green ash
<i>Hedera helix</i>	English ivy
<i>Phalaris arundinacea</i>	Reed canary grass
<i>Platanus occidentalis</i>	American sycamore
<i>Pontederia cordata</i>	Pickerelweed
<i>Populus tremuloides</i>	Quaking aspen
<i>Toxicodendron radicans</i>	Eastern poison ivy
<i>Typha latifolia</i>	Broad-leaf cat-tail
<i>Ulmus rubra</i>	Slippery elm
<i>Vitis aestivalis</i>	Summer grape

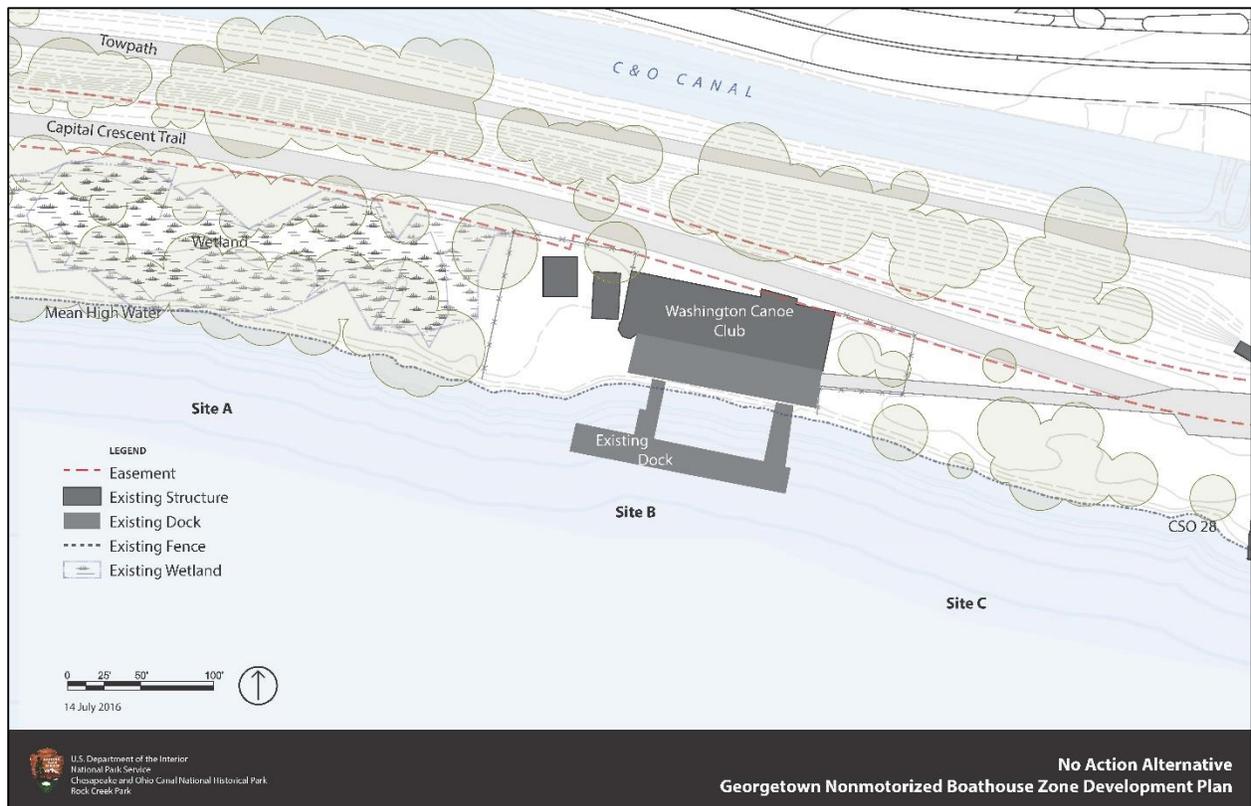


FIGURE 8. WETLANDS ON SITE A

RIVERINE WETLANDS AND SUBMERGED AQUATIC VEGETATION

Under Director's Order 77-1, NPS also considers water up to 2 meters (about 6 feet) deep to be wetlands. Although precise bathymetry for the area is not available, navigational charts and observational data show the river rapidly becoming deep (i.e., 23–24 feet) in front of sites D and E. The river immediately in front of sites A, B, and C is between 6–10 feet deep but quickly becomes 10 feet or deeper. As a result, the shallow water riverine wetlands do not extend far offshore (NOAA 2016), and the measurements taken during the wetland delineation confirmed that river becomes deeper rapidly in front of site E. The river bed is composed of sands and sediments, and submerged aquatic vegetation (SAV) historically has occurred in the Potomac River along the shoreline. The Virginia Institute of Marine Sciences maps SAV beds in the Chesapeake Bay region annually. Based on inspection of historic and recent SAV maps, there is a historic SAV bed in the area around the zone at the Washington Canoe Club docks and upstream of it adjacent to site A. SAV of unknown species composition was recorded in the zone in 2014 and 2015 along the banks of sites A and B, with some overlap into site C. A visual inspection of the site during the 2016 wetland survey did not reveal SAV. The last time SAV was recorded in the zone was in 2002 as a thick growth of *Hydrilla* in front of site A (VIMS 2016; Schnabel Engineering 2005).

FLOODPLAINS

Floodplains are defined by the NPS Floodplain Management Guideline as “the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, and including, at a minimum, that area subject to temporary inundation by a regulatory flood.” The entire project area is within a 100-year floodplain, in which there is a 1% chance of flooding in a given year. The project area is in the Federal Emergency Management Agency's Flood Hazard Zone AE with a 100-year flood elevation of +19.00 feet (DC OCTO 2015). The floodplain extends north toward the canal and stops at the canal levee, covering Water Street NW and the CCT (figure 9). The shoreline elevation varies from +8.00 feet at the western end to +15.00 feet on the eastern end of the zone (DC OCTO 2015; FIRM 2010). The highest tide of the year (the spring tide) is approximately +8.00 feet and lower areas at the western end of the zone are prone to periodic inundation.

Floodplain values include the ability of the floodplain to absorb increased water flows, recharge groundwater, and provide floodplain habitat. Floodplain values in the project area are limited, with both sites D and E either developed or fully paved. Site C has limited floodplain value, with mostly turfgrass and trees, with a driveway to the Washington Canoe Club and access to the combined sewer overflow outfall at the site. Site A would have the greatest intrinsic floodplain value. Currently, obstructions in the floodplain occur, generally in the form of structures, such as Washington Canoe Club, the Alexandria Aqueduct, Potomac Boat Club, and the three townhouses. West of the Alexandria Aqueduct the land between the shore and the CCT includes mostly trees and low vegetation with no structures, so some capacity is available to accommodate flood waters, and some floodplain function exists in the form of habitat and recharge.

The Potomac River has experienced many severe floods, and this area has been subject to the effects of flooding in the past. Flooding was a major factor in why the canal was closed. The most recent severe flood occurred in 1996; minor floods occurred in 2003 and 2008.

Georgetown Nonmotorized Boathouse Zone

Rock Creek Park and Chesapeake & Ohio Canal National Historical Park
Washington, DC

National Park Service
U.S. Department of the Interior



FIGURE 9. THE FLOODPLAIN IN THE PROJECT AREA

Historic Districts and Structures

CHARACTER DEFINING FEATURES OF THE HISTORIC LANDSCAPE WITHIN THE ZONE

The Potomac River and the C&O Canal are the primary organizing features of the landscape of the zone. The river terrace and C&O Canal levee provide spatial organization oriented toward the river. In addition, the presence of the Alexandria Aqueduct establishes a portal that divides the zone into distinct character areas. East of the Alexandria Aqueduct along Water Street NW, the urban character is marked by the presence of buildings adjacent to the river that block views of the river and minimize access. Several open lots and the open character of the concession are exceptions that are more consistent with the open character of Georgetown Waterfront Park located to the east. Whitehurst Freeway and Key Bridge provide a strong spatial definition to the site by providing a “ceiling.” West of the Alexandria Aqueduct, the site character is more rural—the Washington Canoe Club is the only structure, and the area has significantly more vegetation. Views to the river are open, and the C&O Canal levee creates a strong boundary. The spatial organization of the site is mimicked along the C&O Canal towpath, which crosses below Whitehurst Freeway to establish a “threshold” between city and nature. The C&O Canal levee and flat riverside terraces formed by construction fill dominate the site. The topography is a significant component of the site’s spatial organization.

The vegetation at the sites in the zone is a strong contributor to its present character. Historic photographs indicate that the forested condition on the canal levee is relatively recent. Forest cover obscures the relationship of the C&O Canal to the Potomac River, while vegetation provides a continuum with the forested embankment of the C&O Canal that distinguishes the areas east and west of the Alexandria Aqueduct and reinforces the spatial organization of the zone.

The Potomac River is the primary feature of the zone. Within the zone, views and vantage points (figure 10) that are significant as character-defining features of the region as a whole are those that establish the relationship of the various cultural features to the natural setting, to the history of the C&O Canal, and to one another. These views and vantage points include the forested slope of the C&O Canal levee and, to a lesser extent, the forested edge of the zone, which establishes the natural character of the Potomac River above Georgetown. The view through the Alexandria Aqueduct from both directions is important in that it marks a symbolic transition from city to nature in the form of a literal threshold marked by the arch of the aqueduct.

In a separate analysis being completed for section 106 of the NHPA, the area of potential effect (APE) was divided into the primary APE, which is the zone itself, and the secondary APE, in which other resources that would be affected by changes in their viewshed would be affected.

PRIMARY AREA OF POTENTIAL EFFECT

C&O Canal and Historic District

The upstream end of the zone, from the Alexandria Aqueduct west, is part of the C&O Canal NHP. The canal and its levee run parallel to the river behind the zone on the west side of CCT, rising about 25 feet in elevation above the trail. The C&O Canal is one of the most intact and impressive remnants of the American canal-building era, and its historical significance is the basis for creating the C&O Canal NHP. The C&O Canal is historically significant primarily because it embodies 19th century engineering and architectural technology. The canal operated from the late 1820s to 1924 as a route for transporting coal, lumber, agricultural products, and various other bulk materials from western Maryland to the port of Georgetown and to the navigable lower reaches of the Potomac River.

The entire length of the canal is listed in the NRHP because of its historical significance for architecture, engineering, commerce, transportation, military history, and conservation (NPS 1971).

Georgetown Nonmotorized Boathouse Zone

Rock Creek Park and Chesapeake & Ohio Canal National Historical Park
Washington, DC

National Park Service
U.S. Department of the Interior

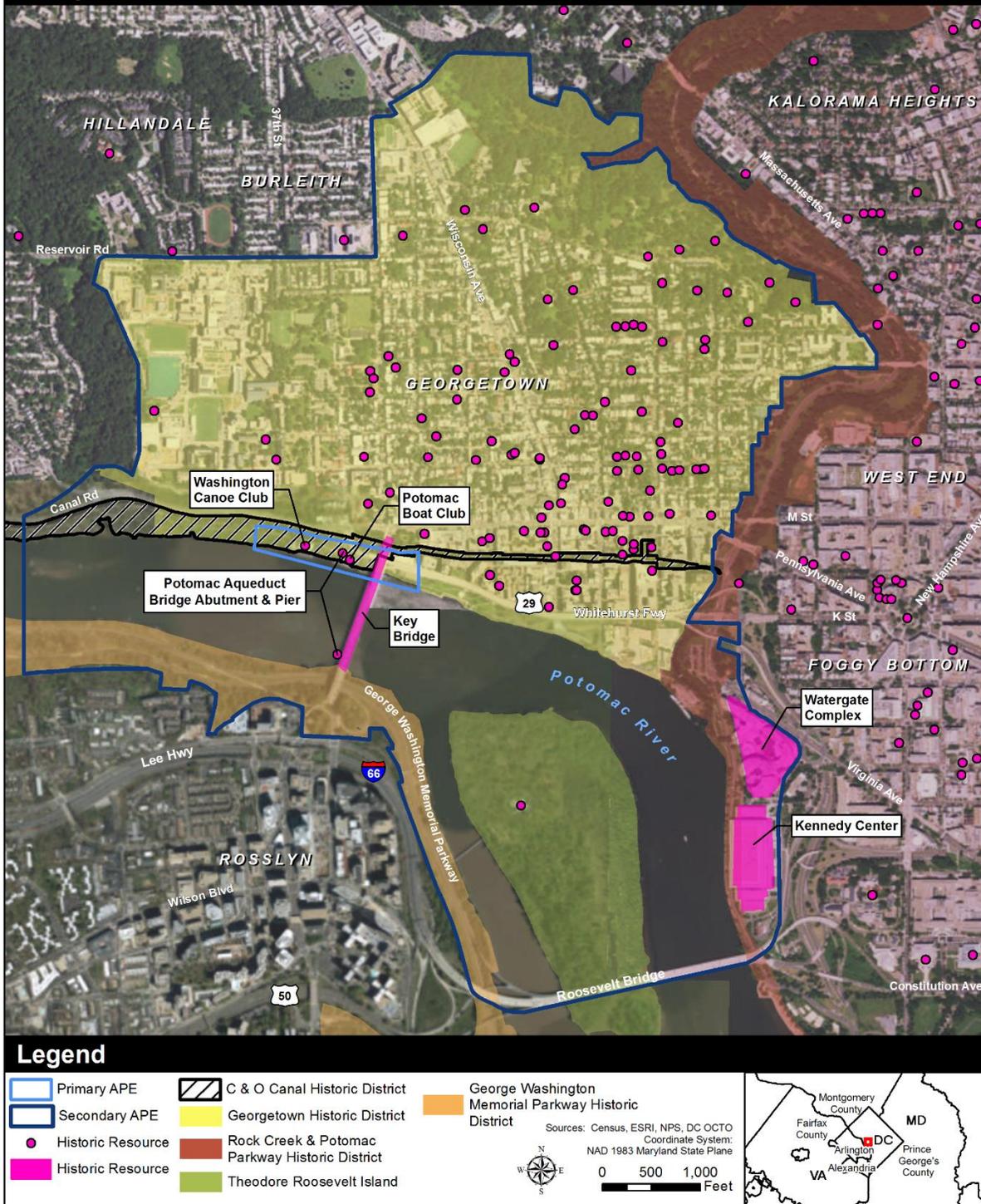


FIGURE 10. AREA OF POTENTIAL EFFECT

Potomac Aqueduct Bridge Abutment & Pier (Alexandria Aqueduct)

The Georgetown abutment and stone pier, located within the zone, are remnants of the C&O Canal aqueduct over the Potomac River built between 1833 and 1843 and designed by Maj. William Turnbull of the US Topographical Engineers. The aqueduct bridge was a major early-19th century engineering achievement involving construction of piers to bedrock 35 feet under the waterline. During the Civil War, the structure was drained and used as a highway bridge. The canal was reconstructed with a wooden Howe truss in 1868 with a highway bridge above. Iron trusses were added in 1888, and the canal was converted to a bridge. In 1933, the superstructure was removed. The piers were cut down in 1962. The remnants of the aqueduct received DC landmark designation on January 23, 1973 (DC HPO 2009).

Washington Canoe Club

The Washington Canoe Club is located on a narrow strip of land between the bank of the Potomac River and the C&O Canal at the western end of Water Street NW just west of the Potomac Aqueduct Bridge Abutment (Alexandria Aqueduct). The CCT runs immediately behind the building. The club was constructed in 1904 and remains an excellent example of shingle style architecture characterized by octagonal towers, a cross-gabled roof with louvered cupola, a central pavilion with flanking balconies, shaped verge boards in the prominent gable end, and shingle cladding. The building received DC landmark designation on January 23, 1973 and was listed in the NRHP in 1991 (NPS 1990a; DC HPO 2009).

Potomac Boat Club

The Potomac Boat Club is also located on the western end of Water Street NW, just east of the Potomac Aqueduct Bridge Abutment and Pier (Alexandria Aqueduct). The boat house, which exhibits Craftsman style influences, was constructed in 1908 as the second structure for the Potomac Boat Club. The two-story frame boat house displays typical characteristics of its type including a façade that faces the river, a low-pitch front-gabled roof, a tower, boat ports, large French doors, and shingle cladding. As one of only two remaining early 20th-century boat clubs along the Potomac River in the District of Columbia, the Potomac Boat Club received DC historic landmark designation on January 23, 1973, and was listed in the NRHP in 1991 (NPS 1990b).

Francis Scott Key Bridge

Key Bridge spans the Potomac River between Georgetown in Washington, DC, and Rosslyn in Arlington County, Virginia. The bridge, which carries US Route 29, has a northern approach at the foot of 35th Street NW. Key Bridge is a skillfully designed reinforced concrete arch bridge. Originally constructed to provide automotive, trolley, and pedestrian transit, the bridge has served as an important link between Washington and northern Virginia. Nathan C. Wyeth designed the bridge in 1916, and construction was completed in 1923. The structure is noteworthy for its elegant and simple Classical design. The Classically inspired structure is composed of reinforced concrete, with eight arches. Five of the arches span the river, while the other three span land features. The original structure included seven arches. The eighth arch was added in 1938–1939 to span the George Washington Memorial Parkway in Virginia. The superstructure was altered in 1955 and 1987. The bridge was listed in the NRHP in 1996 under Criterion C in the area of engineering and because it was designed by an important local architect, Nathan C. Wyeth (NPS 1995b).

Georgetown Historic District

Georgetown was founded by an act of the Maryland Assembly in 1751 and became part of the District of Columbia upon its establishment in 1791, although it remained a separate jurisdictional entity within the District until 1871. The Georgetown Historic District is a remarkably intact example of a historic port town and encompasses the area originally laid out in 1751. Its narrow grid streets contrast from the wide

streets of L'Enfant's Plan, and its collection of buildings and structures are among the city's oldest, demonstrating a rich variety of residential, commercial, institutional, and industrial examples. The historic district was first established by the Old Georgetown Act in 1950 and listed in the DC Inventory of Historic Sites in 1964. In 1967, the Georgetown Historic District was designated a national historic landmark and was listed in the NRHP under Criteria A and C (DC HPO 2009).

SECONDARY AREA OF POTENTIAL EFFECT

George Washington Memorial Parkway

The George Washington Memorial Parkway (GWMP) was listed in the NRHP in 1995 and comprises 7,146 acres and extends 38.3 miles along the Potomac River. In Virginia, the GWMP includes two sections. The southern section, opened in 1932, extends from Arlington Memorial Bridge Gateway to Mount Vernon. The northern section runs 9.7 miles from Memorial Bridge to the Capital Beltway/Interstate 495 in Virginia and opened in 1965. The parkway has a period of significance from 1930 to 1966. Under Criterion C, the GWMP is significant for the Potomac River corridor's association with George Washington. Under Criterion C the parkway is significant for landscape architecture designed by Frederick Law Olmsted, Jr., Charles Eliot, and Gilmore D. Clark (NPS 1995c). Built with the twin purposes of conserving the Potomac Gorge and connecting historic sites associated with George Washington, the views from the parkway were designed by landscape architects to capitalize on both the scenic value of the river valley and the monumental character of the nation's capital. Historic vistas, such as those toward Georgetown, were preserved by planners and engineers by managing vegetation and small-scale features along the road and through framing the various vistas with bridges, natural systems, and circulation features. These views have been altered over time through the growth of vegetation along the parkway, but remain a significant and character-defining feature of the GWMP (Donaldson 2009). A cultural landscapes inventory of GWMP–North, completed in 2009, identified contributing landscape characteristics that include natural systems and features, spatial organization, land use, topography, vegetation, circulation, buildings and structures, views and vistas, small-scale features, and archeological sites (Donaldson 2009).

Theodore Roosevelt Island

Theodore Roosevelt Island is an 88.5-acre island that sits in the Potomac River near Key Bridge. Although the island is accessed in Virginia, the island is part of Washington, DC. The Theodore Roosevelt Memorial Association bought the island in October 1931; it was transferred to the federal government in March 1932 to serve as a national memorial to President Theodore Roosevelt. The island honors the 26th president primarily for his role as a leader in conservation, exhibited in the natural features of the island itself, including its lands, waters, flora, and fauna. In 1967, a large open-air architectural monument commemorating Roosevelt with sculpture and inscriptions was completed on the northern end of the island. Roosevelt Island, administratively part of the GWMP, was listed in the NRHP in 1967, and its nomination was updated in 1999 (NPS 1999).

John F. Kennedy Center for the Performing Arts

Located at 2700 F Street NW at the intersection of New Hampshire Avenue NW and the Rock Creek and Potomac Parkway, the John F. Kennedy Center for the Performing Arts is situated on a prominent site overlooking the Potomac River at the western edge of the Monumental Core of Washington, DC. The Kennedy Center was constructed between 1964 and 1971 and dedicated in 1971 as a national performing arts center and as a monument to President John F. Kennedy. It is eligible for listing in the NRHP for its national significance related to the life of President John F. Kennedy and for its Modern architecture designed by 20th-century master architect, Edward Durell Stone (Robinson & Associates 2012).

Watergate Complex

Watergate, a unified complex consisting of six inter-connected buildings constructed between 1964 and 1971, is one of the most well-known complexes in Washington, DC, politically and architecturally. Notwithstanding the building's significance for its associations with the 1972 Watergate scandal, the complex embodies exceptional architectural significance as an outstanding and innovative example of the Modern Movement in Washington, DC. The scale and mixed-use program of the Watergate Complex required the formation of Washington's first private initiative Planned Unit Development, a new and largely untested idea in urban planning. The complex was listed in the NRHP in 2005 and received DC landmark designation that same year (NPS 2005a).

Rock Creek and Potomac Parkway Historic District

The property known as the Rock Creek and Potomac Parkway occupies the gorge and rim of the lower Rock Creek Valley (the section of the valley south of the National Zoological Park) and a stretch of land along the Potomac riverfront. The linear park comprises approximately 180 acres; it varies in width from a couple dozen feet at its southern end to more than 500 feet near the northern boundary. The riverfront incorporates a grassy embankment, and the valley contains rock outcroppings, a variety of hardwood groves, a myriad of shrubs and dense understory, invasive vines, and a few grassy swards with specimen trees. The historic district incorporates a variety of extant 19th-century industrial structures, the earliest dates to 1828. Bridges are the most prominent extant cultural resources. Several stone retaining walls exist near bridge abutments, steep embankments, and along the creek. The dominating feature of the park is the Rock Creek and Potomac Parkway. The historic district is a DC landmark and was listed in the NRHP in 2005. The Rock Creek and Potomac Parkway meets NRHP Criteria A and C in the areas of community planning and development, engineering, recreation, and landscape architecture. The property's period of significance, 1828–1951, is defined by the beginning of construction of the C&O Canal and the erection of *The Arts of Peace* sculpture groups (NPS 2005b).

Land Use and Accessibility to Adjacent Residential and Other Uses

NPS created the zone from several parcels during a series of land transfers over a period of many years. As a result, the property records are complex. Property tax records, the District of Columbia geographic information system (GIS) database, land transfer property descriptions, and partial property boundary surveys of several areas of the zone were used to develop the site plan for this project, and these records and documents reveal several easements for access, maintenance, and a utility line (figure 11). Georgetown University owns a 15-foot easement that aligns with the CCT and provides access to a property owned by the university upstream from the zone. Both Key Bridge and Whitehurst Freeway are elevated facilities that cross over the zone, and DDOT requires maintenance setbacks from these facilities. The Alexandria Aqueduct and C&O Canal each require a setback of 25 feet according to NPS recommendations.

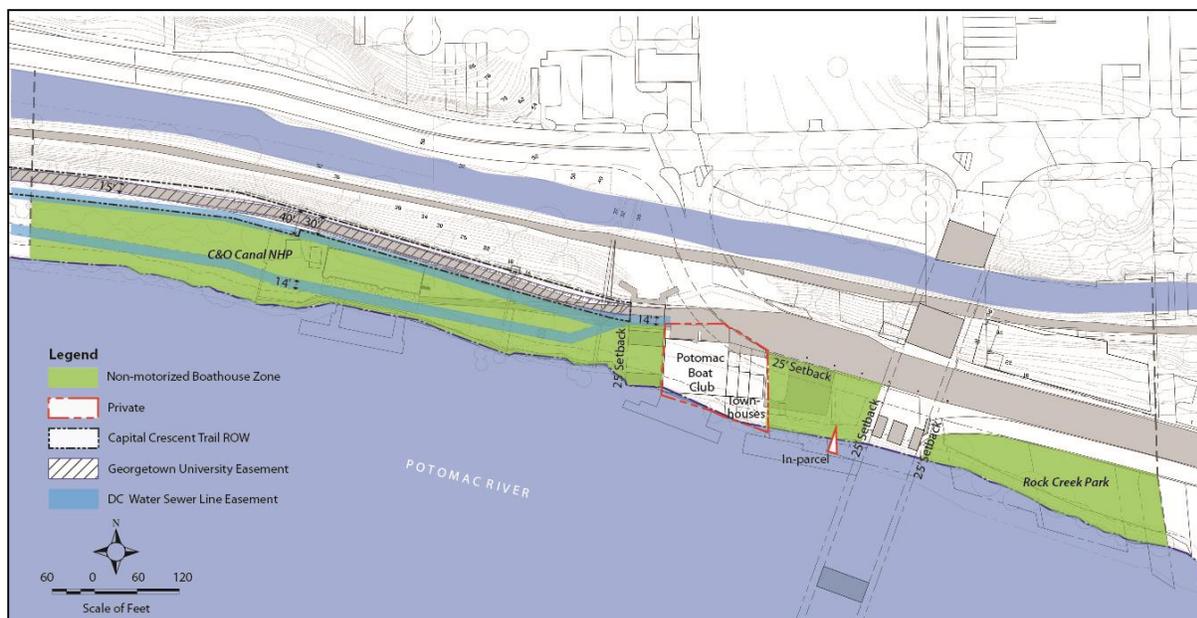


FIGURE 11. LAND OWNERSHIP AND EASEMENTS IN THE ZONE

AREA LAND USE PLANS

Although the land in the zone is federally owned and administered by NPS, it is part of the larger urban fabric, and should be compatible with plans for the area, including the District of Columbia Comprehensive Plan, which includes Citywide Elements developed by the District of Columbia Office of Planning and Federal Elements developed by the National Capital Planning Commission (NCPC), as well as NCPC’s CapitalSpace initiative. CapitalSpace is a partnership effort between NCPC, NPS, and several District of Columbia agencies (NCPC 2010) formed to coordinate existing management plans, maximize limited resources, and create a stronger park system for the city.

Applicable elements of the comprehensive plan include the recommendation that the Georgetown Waterfront should continue to provide a continuous linear park connection along the Potomac River waterfront, and that the city should continue working with NPS to stabilize the Potomac River banks, clean tidal flat areas, and reduce erosion along the Potomac shoreline. The comprehensive plan also notes the anticipated plans for additional nonmotorized boating facilities on the Georgetown Waterfront.

CapitalSpace recommends the District build and strengthen community support through partnerships with businesses, residents, workers, and visitors; create unique places for neighborhoods, strengthening the overall identity of parks and open space; and identify strategies to expand programs and amenity options.

ZONING

Any structure constructed and owned by NPS within the zone would be exempt from District of Columbia zoning regulations, as long as it includes a public access component. However, if a facility or site were be completely leased to a private entity, it would be subject to zoning controls; therefore, these controls are described here. The nonmotorized boathouse zone includes three separate zoning districts (figure 12). The site of the Washington Canoe Club retains the waterfront’s original light industrial zoning designation (CM-1). As land use along the river changed, the District of Columbia established new waterfront (W) districts, and portions of the nonmotorized boathouse zone were rezoned. The majority of the nonmotorized boathouse zone is zoned W-1. A parcel at the western end (site A) was rezoned to W-0 in 2006 as part of the Georgetown University boathouse proposal.

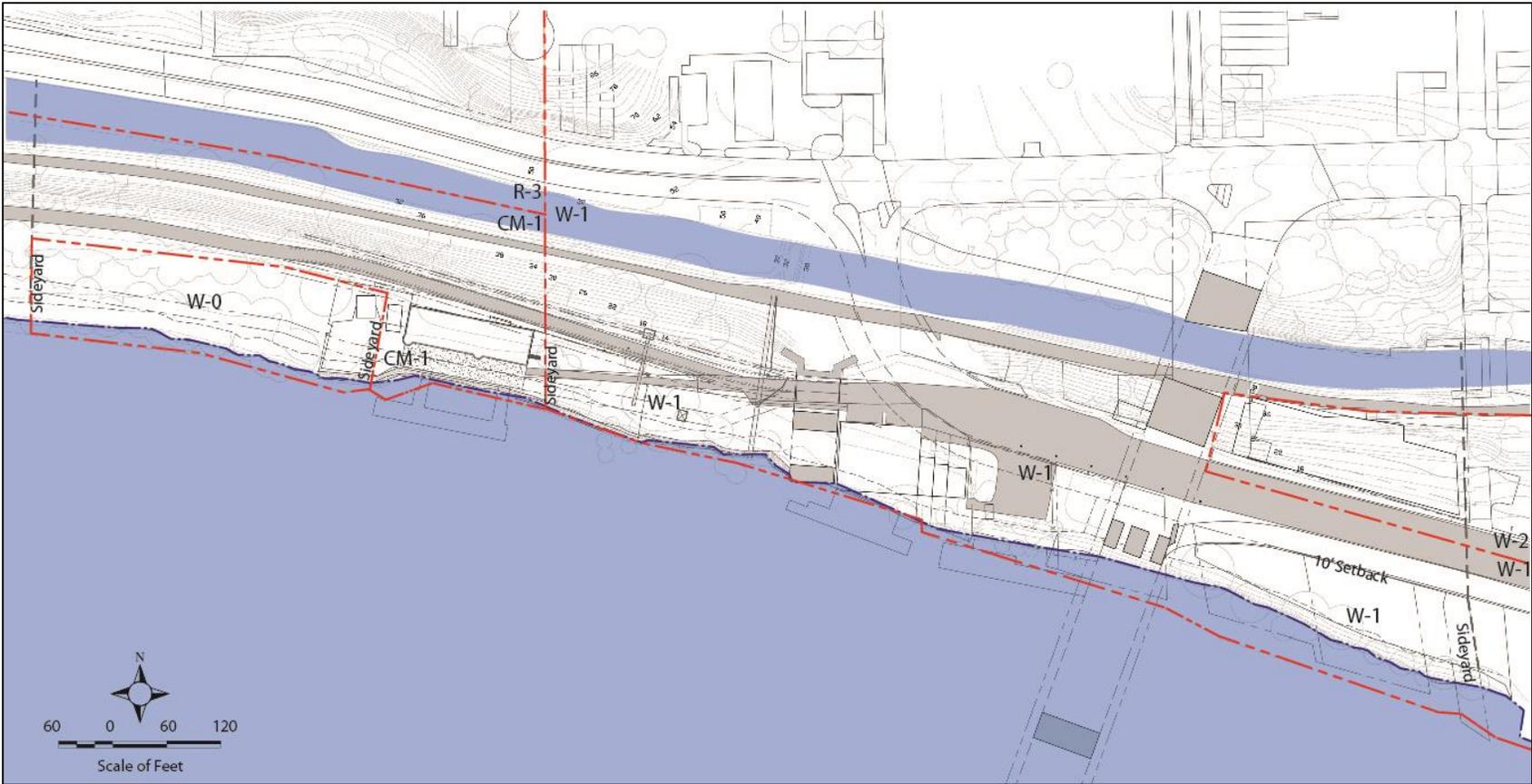


FIGURE 12. ZONING IN THE NONMOTORIZED BOATHOUSE ZONE

The purpose of the waterfront districts is to encourage a diversity of compatible land uses at various densities, including combinations of residential, offices, retail, recreational, arts and cultural, and other miscellaneous uses. The W-0 district permits open space, park, and low-density and low-height waterfront-oriented retail and arts uses; the W-1 district permits a moderate height and density. The W-1, W-2, and W-3 districts also are intended to be relatively self-contained by supplying a variety of housing, service, employment, and recreational opportunities in one location. The W-0 district is intended to provide waterfront recreational areas with related waterfront-oriented or waterfront-enhancing uses to serve local and regional open space recreational needs. Zoning regulations for the waterfront districts include a 100-foot setback from the shoreline except for structures associated with publicly accessible wharves, docks, or piers. No shoreline setbacks are required for boathouses that provide public access to the dock; however, private boathouses are subject to the setback requirement. The 100-foot setback can be reduced to 20 feet with a variance.

A boathouse can be permitted as a special exception in the W-0 district, if it:

- meets the criteria for special exceptions
- is designed to enhance the visual and recreational opportunities offered along the waterfront
- will not result in the filling of normally submerged areas and will minimize excavation to that reasonably required for a facility that is principally above-grade
- will be located so as not likely to become objectionable to surrounding and nearby property because of noise, traffic, or parking

A limited number of motorized safety launches for coaches are allowed for supervision of rowing practice and water safety. A boathouse may include restrooms, showers, locker rooms, a kitchen, exercise area, boat storage and maintenance, coaches' office, one caretaker's residence, a rowing tank, dock, and related functions. Off-street parking spaces are required but may be provided off-site as a special exception, if an applicant proves that compliance with this parking requirement would be unsafe or economically impractical and if the parking spaces are reasonably convenient parking for patrons of the principal building; are unlikely to become objectionable to adjoining or nearby property, park space, or the waterfront because of noise, traffic, or other objectionable conditions; are adequately screened from adjacent park space and from the waterfront; and are designed to prevent stormwater run-off directly into the river. All or a portion of required parking spaces for a boathouse may be reduced or eliminated by special exception if an applicant proves that provision of parking would result in significant adverse impacts on adjacent park land and reasonable and conveniently located alternatives to the required parking exist and are available to the boathouse users with minimal impact on adjacent land or development.

ADJACENT RESIDENTIAL AND OTHER USES

Four privately owned properties are in the project area: the Potomac Boat Club (adjacent to the Alexandria Aqueduct) and three townhouses on site D (between the Potomac Boat Club and the existing Key Bridge Boathouse concession, also on site D). The Potomac Boat Club currently has an apron and dock on the Potomac River to serve its members. The existing Key Bridge Boathouse dock ends at the property boundary line with the townhouses. None of the townhouses has a dock. These properties all have access from Water Street NW; Potomac Boat Club has a number of private pull-in parking spaces off of Water Street NW in front of the club.

On the street side, all four properties are accessed from Water Street NW and have private parking spaces off the street. Washington Canoe Club is a private club occupying its original clubhouse building located in the C&O Canal NHP. Privately owned commercial properties are on the north side of Water Street NW, and a mixed use condo is east of 34th Street NW.

Transportation

STUDY AREAS

Two study areas are included in the TIA (appendix B) that was used to determine transportation issues, impacts, and potential mitigation measures. Existing conditions within these two study areas are described in this section. The primary study area, which covers all transportation modes—traffic, transit, pedestrians, and bicycles—includes the K Street/Water Street NW corridor between 27th Street NW and the end of Water Street/driveway access to the Washington Canoe Club and six intersections. The secondary study area, which was used for traffic analysis, includes the primary study area intersections plus four intersections serving Thompson’s access (27th Street NW/I Street NW/Virginia Avenue NW/Rock Creek Parkway) and three intersections on M Street NW (31st Street NW, Wisconsin Avenue NW, and 34th Street NW), for a total of 13 intersections (figure 13). Although not in the nonmotorized boathouse zone, Thompson’s is included in this discussion because it is assumed that a portion of Thompson’s users would shift from Thompson’s to new facilities in the zone and new private users, with different transportation habits, would replace them at Thompson’s. Analysis of non-transportation modes includes varying distances beyond the primary study area: a 1-mile radius for bicycles, a 0.25-mile radius for transit, and a 0.25-mile radius for parking garages. The TIA provides more detail.

PEDESTRIAN NETWORK

Existing conditions were evaluated with the District of Columbia’s GIS data and aerial and streetview imagery from Google Maps, and during site visits in December 2015 and January 2016. More details on the pedestrian network are included in the TIA (appendix B).

Within the primary study area, sidewalks only exist between 34th Street NW and the Key Bridge overpass. While most of the sidewalks in the primary study area are in good condition, many sidewalks along K Street/Water Street NW are obstructed by vertical columns supporting the Whitehurst Freeway that runs above. Outside of those sidewalks and within the primary study area, pedestrians must share the pavement with vehicles, trucks, buses, and cyclists without any definition of who should be where. The Water Street NW pavement starts to narrow approximately halfway between the Key Bridge overpass and the Alexandria Aqueduct until it becomes the 16 foot-wide CCT. The lack of sidewalks creates unsafe conditions for pedestrians because they must walk among vehicles on the roadway.

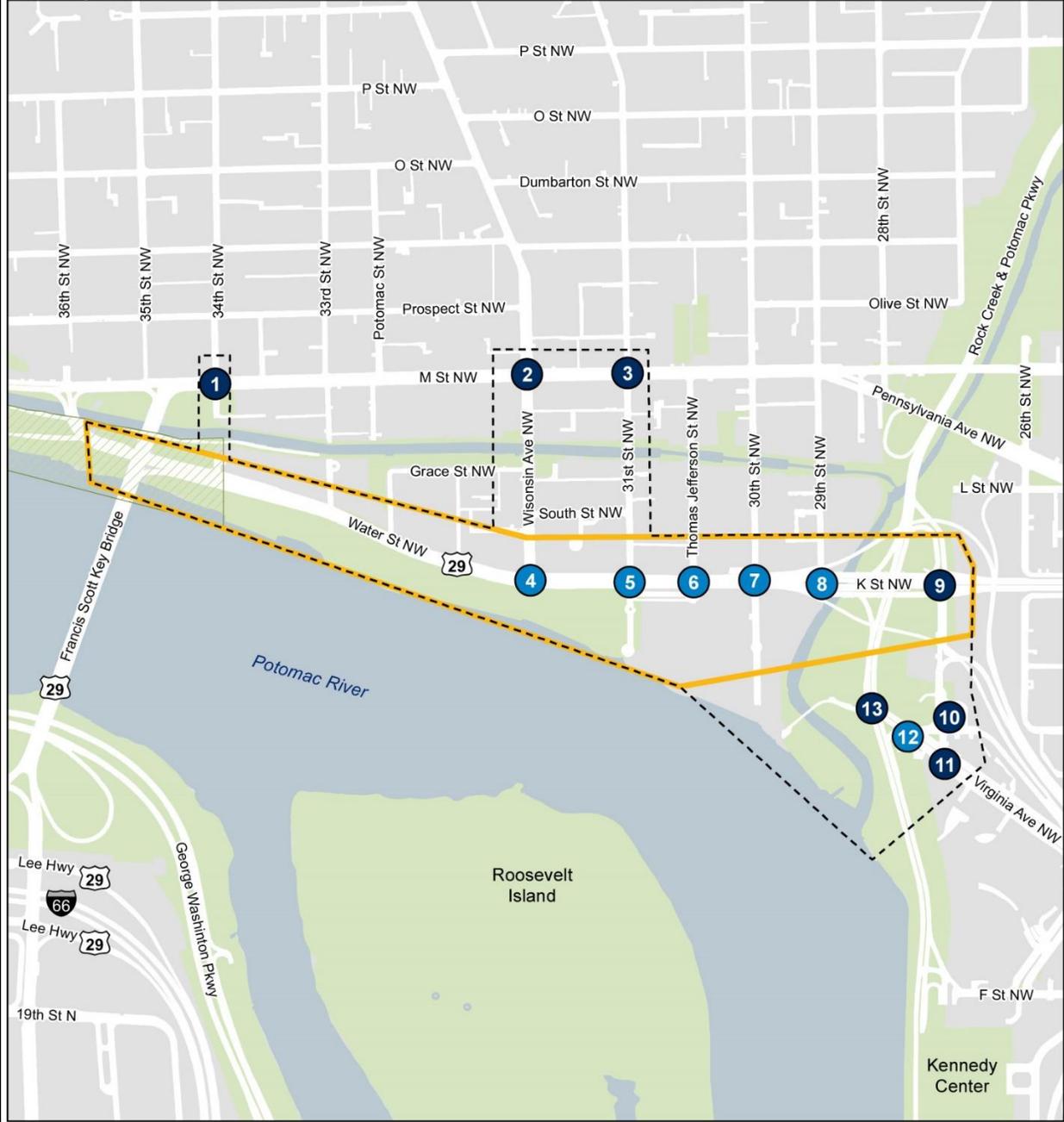
BICYCLE NETWORK

Existing bicycle facilities within the project area, primary study area, and a 1-mile radius from the primary study area are shown in figure 14 and described in full detail in the TIA, with a focus on bicycle facilities in Washington, DC. Data were collected from the District of Columbia’s GIS trail data and local bicycle plans and verified with aerial imagery and field visits as needed. More details on the bicycle network, including gaps or deficiencies in the bicycle network and additional observations of bicycle traffic, are included in the TIA (appendix B).

The CCT, a multiuse trail that runs along the Potomac River in northwest DC, terminates in the project area at the Alexandria Aqueduct. Besides the CCT, no other bicycle facilities are in the project area. Therefore, within the project area, cyclists must share the unmarked expanse of pavement that is Water Street NW between the Alexandria Aqueduct and 34th Street NW. Without proper signage and road striping, the mix of cyclists, vehicles, pedestrians, and sometimes trucks and buses within the project area poses safety issues to all users.

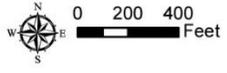
Georgetown Nonmotorized Boathouse Zone
 Environmental Assessment
 Washington, DC

National Park Service
 U.S. Department of the Interior



- Site Boundary
- Primary Study Area (All Modes)
- Secondary Study Area (Traffic Only)

- Study Intersection**
- Signalized
 - Unsignalized

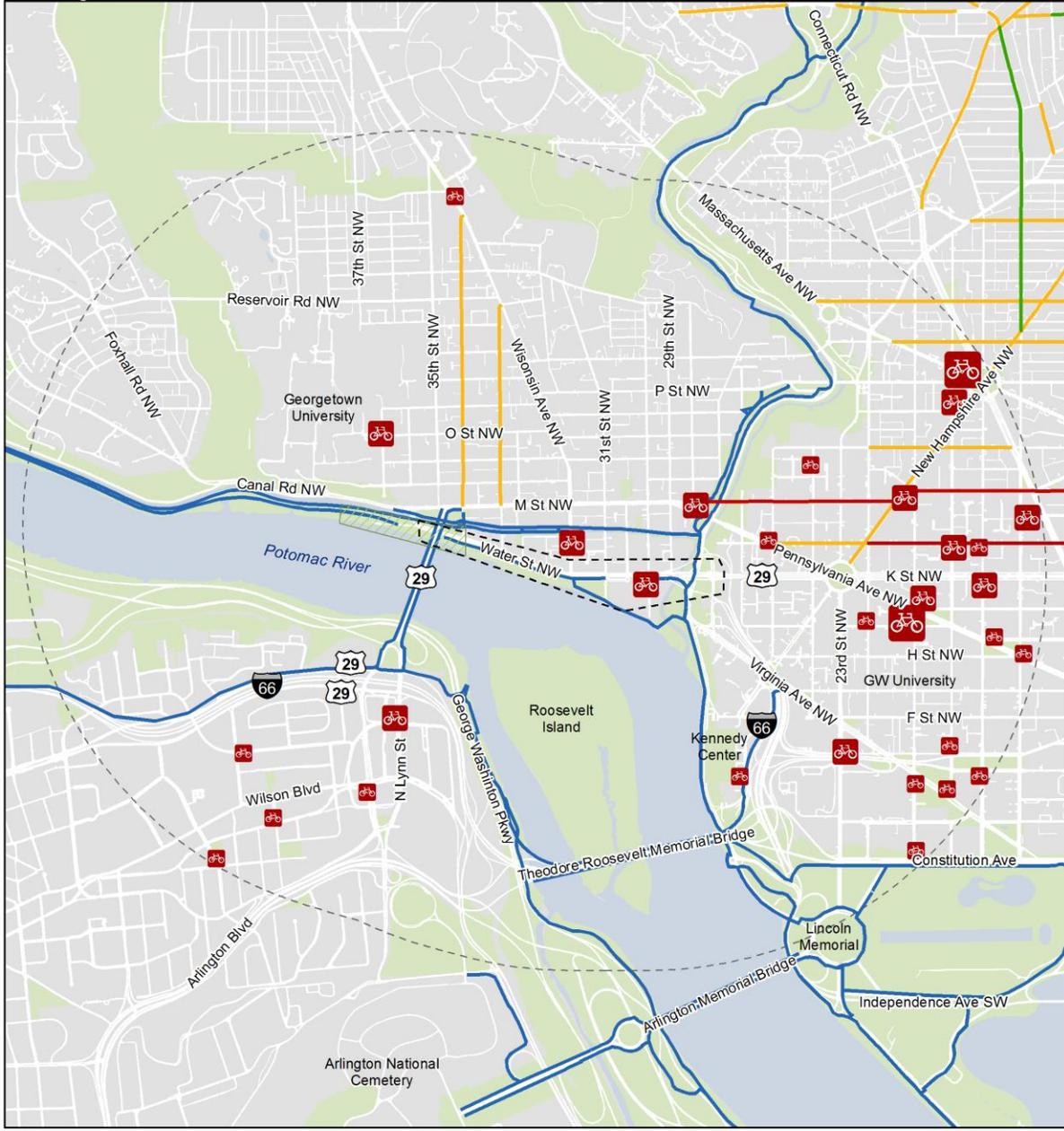


Sources: DC GIS (2015)

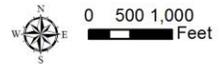
FIGURE 13. PRIMARY AND SECONDARY TRANSPORTATION STUDY AREAS

Georgetown Nonmotorized Boathouse Zone
 Environmental Assessment
 Washington, DC

National Park Service
 U.S. Department of the Interior



- Primary Study Areas (All Modes)
 - One Mile Radius
 - Multi-Use Path
 - Cycle Track
 - Existing Bike Lane
 - Shared Lane
- | Capital Bikeshare (# of Docks) | |
|------------------------------------|---------|
| ■ | 11 - 15 |
| ■ | 16 - 23 |
| ■ | 24 - 40 |



Sources:
 DC GIS (2015)
 Louis Berger (2014, 2015)
 DDOT (2014, 2015)

FIGURE 14. BICYCLE NETWORK WITHIN PRIMARY STUDY AREA AND 1-MILE BUFFER

The primary study area and the 1-mile surrounding area lie at or near the terminus of a number of long-distance multiuse trails that extend well outside the primary study area, like the C&O Canal towpath, CCT, Martha Custis Trail, Mount Vernon Trail, and Rock Creek Park Multi-use Trail. A number of shorter distance trails also can be found in the area immediately surrounding the primary study area, including the Georgetown Waterfront Park Trail, Rose Park Trail, and several multiuse trails that cross area bridges, including Key Bridge and Roosevelt Bridge. The National Mall Trails system's western edge also lies just southeast of the primary study area.

Bikeshare Facilities

Capital Bikeshare is an automated bicycle-sharing system serving Washington, DC; Arlington and Alexandria, Virginia; and Montgomery County, Maryland. Note that the Capital Bikeshare facilities shown on the bicycle facilities map (figure 14) (based on DC GIS data downloaded in December 2015) do not match the latest information on the Capital Bikeshare website. Capital Bikeshare has two bike stations in the primary study area, located at Washington Harbour on 30th Street NW and the intersection of K and 34th Streets NW (Capital Bikeshare n.d.), with one additional station located just north at the intersection of Wisconsin Avenue NW and the C&O Canal towpath.

TRANSIT

Transit within the primary study area and larger 0.25-mile area beyond the primary study area is primarily limited to local buses, although the closest Metrorail access and carsharing locations within the noted area are also discussed. The Washington Metropolitan Area Transit Administration (WMATA) operates both Metrorail and Metrobus service.

Metrorail Access

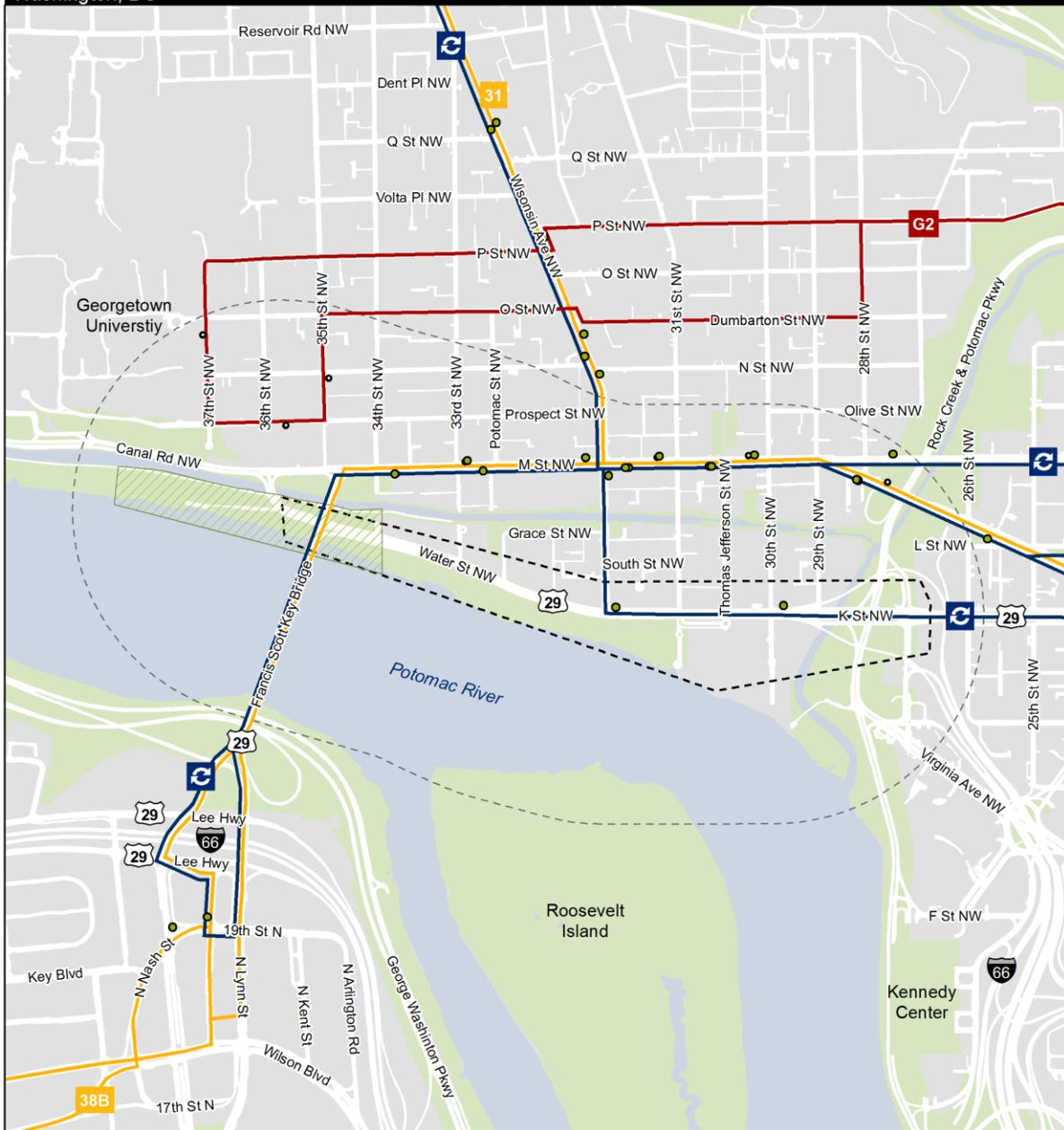
The Metrorail does not serve Georgetown directly, so travelers must either walk or take a Metrobus to a nearby station. Two Metrorail stations are located near the study area: Foggy Bottom-GWU and Rosslyn. Foggy Bottom-GWU is located slightly more than 2,000 feet from the east end of the study area, and Rosslyn is located slightly less than 3,500 feet from the west end of the study area in Virginia. See the TIA for more detail.

Metrobus

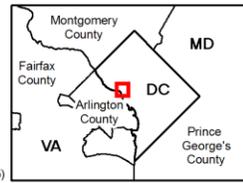
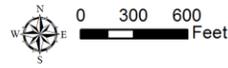
WMATA provides the core of the transit service in the study area and the 0.25-mile surrounding area with its Metrobus services. A network of routes classified as "major" serve the study area along M Street NW and Wisconsin Avenue NW, and one route classified as "local" serves the northwest corner of the buffer area near Georgetown University. The major routes include 38B, 33, 31, 30S, and 30N, which provide vital links to Metro stations for this area and direct service to downtown and suburbs in Maryland and Virginia (WMATA 2015). The sole local route within the transit study area is Route G2. The Metrobus routes within the study area and 0.25-mile buffer area are shown in figure 15. See the TIA for ridership and service descriptions and details (narrative and tables) for these routes.

Georgetown Nonmotorized Boathouse Zone Environmental Assessment Washington, DC

National Park Service
U.S. Department of the Interior



- Site Boundary
- Primary Study Areas (All Modes)
- Quarter-Mile Analysis Area
- Bus Stop
- DC Circulator
- WMATA**
- Major Route
- Local Route



Sources: DC GIS (2015), WMATA (2015)

FIGURE 15. METROBUS AND DC CIRCULATOR ROUTES WITHIN QUARTER-MILE BUFFER AREA

DC Circulator

The DC Circulator makes up a significant portion of the transit service in the study area and operates the only bus service on K Street NW along the Georgetown Waterfront. Located near the west end of the Circulator's route structure, Georgetown is served by two routes: the Dupont Circle – Georgetown – Rosslyn Route and the Georgetown – Union Station Route.

The Georgetown – Union Station Route provides service from the study area to Wisconsin Avenue / 35th Street NW or Union Station from 7:00 a.m. to 9:00 p.m., where connections can be made to the intercity trains, regional/commuter trains, and the Metrorail transit system. During late night hours, busses on this route terminate at McPherson Square Metro Station. The Dupont Circle – Rosslyn Route provides service from the study area to Dupont Circle or Rosslyn from 7:00 a.m. to 9:00 p.m., where connections can be made to Metrorail. All DC Circulator bus routes operate on a 10 minute headway for the length of the service day, with no additional service during peak hours (DDOT 2015a). The two DC Circulator routes and their bus stops are shown on figure 15, with more detail on bus stops and service provided in the TIA.

Carshare

Zipcar is the only carshare provider in the 0.25-mile area beyond the primary study area around the study area. Locations are at the Colonial Parking Garage at 3053 M Street NW (four cars) and the Four Seasons Hotel at 2800 Pennsylvania Avenue NW (one car) (Zipcar n.d.; Enterprise CarShare n.d.).

TRUCKS AND BUSES

Trucks and buses currently serve the project area in a similar manner to automobiles. While restricted from continuing past the Alexandria Aqueduct, vehicles pull-up as needed to buildings, parking on the pavement or on the side of the road, and return from the direction they came via a three or more point turn. The lack of definition of the road edges works in favor of trucks because they can easily make three-point turns in this area. Buses commonly service the project area on weekday mornings and afternoons during warmer weather months to bring high school and university rowers to the project area from schools in the area. Currently approximately six reserved bus parking spaces are on the south side of Water Street NW at the Key Bridge overpass.

Outside of the project area, DDOT has designated truck and bus through routes for travel while in the District; these routes are shown in the TIA (appendix B). Based on data from DDOT, there are no bus or truck restrictions in the primary study area (DDOT 2014b).

DDOT also has identified commercial loading zones intended for businesses that do not have access to other off-street loading options. The two closest loading zones to the project are a 44-foot-long loading zone at 3401 Water Street NW on the north side of the street and a 172-foot-long loading zone at 1000 Potomac Street NW on the east side of the street. Details and maps of these and other nearby loading zones are included in the TIA.

PARKING

Existing public parking within the primary study area includes on-street metered and/or time-limited parking and public parking garages, while parking in the 0.25-mile area beyond the study area also includes some public parking lots. A summary of on-street parking in the project area and primary study area is provided below. A general description of parking within 0.25 mile of the primary study area is also included, with a focus on garage parking. Public garages and parking lots were identified by online information or information provided by the Georgetown Business Improvement District. The on-street parking inventory was performed in November 2015. Additional details are provided in the TIA.

On-Street Parking

Within the project area, there are currently 55 public on-street parking spaces. Of these spaces, 22 are restricted to 2 hours and 23 are restricted to 3 hours. Most of these public on-street parking spaces are back-in parking spaces. Within the project area there also are 6 reserved parking spaces for buses on the south side of Water Street NW under the Key Bridge overpass and 15 private parking spaces on the south side of Water Street NW.

On-street parking in the primary study area consists of 217 parking spaces along K Street/Water Street NW between 27th Street NW and the end of Water Street NW. (These numbers include those parking spaces within the project area.) Of these spaces, 193 are open to the general public, while 9 are reserved for select types of vehicles and 15 spaces are for private residences or businesses only. Of the 193 public spaces, 139 spaces are metered spaces and 54 are non-metered (figure 16).

On-street parking throughout the larger 0.25-mile area beyond the primary study area is regulated by the use of on-street parking regulations, such as the residential parking permit program and parking meters (HNTB 2008).

Public Parking Garages and Outdoor Lots

No public parking garages or outdoor lots are located within the project area; however, a large number of both of these types of facilities are located within a short walk, concentrated around the Georgetown Waterfront, along M Street NW, and between Wisconsin Avenue and 30th Street NW. Within 0.25 mile of the primary study area, 25 public parking facilities were identified—5 outdoor surface lots and 20 parking garages (Georgetown BID n.d.; BestParking 2015; Parking Panda 2015). All of these facilities are open during the week, and 19 are open on the weekend, several with late hours. A table detailing the garages and lots, including owner, location, hours, and type, is provided in the TIA.

TRAFFIC

The affected environment for traffic includes a high-level overview discussion of the data collection, study area travel operations, and existing condition traffic analysis results. The TIA includes more details, including a description of study area peak hour operations; a description of the traffic analysis tools; details on turning movements, queuing, and operations; and a crash analysis of the secondary study area intersections and descriptions of all of the roadways within the study area.

Although this traffic section focuses on the larger secondary transportation area, it is important to note that within the project area, vehicular areas are not well defined. The continuous and wide pavement that links the CCT to Water Street NW creates a confusing transition from the trail to Water Street NW and Georgetown Waterfront Park that makes it dangerous for cyclists, motorists, and pedestrians. Although the C&O Canal NHP has installed a gate at the Alexandria Aqueduct, motorists still try to push through the gates, and wayfinding along Water Street NW for wayward motorists is inadequate.

Data Collection

As part of the data collected, a detailed inventory of the lane geometry was conducted through field reconnaissance and a study of aerial imagery. Based on this information, the existing lane geometry and traffic control type (signalized or unsignalized) was identified and is included in the TIA.

To perform the traffic analysis, the team also collected vehicular turning movement counts during weekday AM and PM peak hours (7:00 a.m.–10:00 a.m. and 4:00 p.m.–7:00 p.m.) on a non-holiday week in September 2015 (K Street NW and Virginia Avenue NW) and November 2015 (M Street NW). Vehicular turning movement counts were also collected on a typical Saturday during August 2015 on K Street/Water Street NW to represent the peak summer and early fall near Thompson's. Based on information provided by Key Bridge Boathouse, the Saturday peak period is between 2:00 p.m. and 4:00 p.m.; therefore, Saturday data was collected between 1:00 p.m. and 5:00 p.m. Turning movement volumes for weekday peak hours and Saturday peak hours are included in the TIA.

Study Area Peak Hour Traffic Operations

Rock Creek and Potomac Parkway NW and access to the roadway changes dramatically during the peak periods. The operations are designed to carry the maximum amount of vehicles in the peak direction of flow. During the AM peak period (6:45 a.m.–9:30 a.m.), all lanes on Rock Creek Parkway are designated for southbound travel only north of Virginia Avenue NW. The eastern most lanes that normally carry northbound traffic exit onto Virginia Avenue NW using all lanes along Virginia Avenue and split between I Street NW to access I-66 or follow Virginia Avenue NW toward New Hampshire Avenue NW. The Virginia Avenue NW westbound lanes end at 27th Street NW and all traffic must turn onto 27th Street. The 27th Street NW southbound right-turn lanes on I Street NW westbound are closed. In addition, the ramps between Rock Creek Parkway and the intersection of K and 27th Streets NW are closed to vehicular traffic. Vehicles exiting Thompson's can only make right turns from the driveway onto Rock Creek Parkway southbound.

During the PM peak period (4:00 p.m.–6:15 p.m.), all lanes on Rock Creek Parkway NW are for northbound travel only through the study area. The eastern most lanes that normally carry northbound traffic carry traffic from Virginia Avenue NW westbound onto Rock Creek Parkway northbound. The ramps between Rock Creek Parkway and K/29th Streets NW are closed to vehicular traffic. Vehicles exiting Thompson's can only make left turns from the driveway onto Rock Creek Parkway northbound.

On Saturdays and all other times, all roadways in the study area operate in their normal capacity, allowing for travel in both directions along Rock Creek Parkway NW, Virginia Avenue NW, and the ramps between Rock Creek Parkway and K Street NW.

Intersection Operations Analysis

The results of the existing conditions operations analysis for both signalized and unsignalized intersections are summarized in this section. The TIA (appendix B) contains tables and graphics depicting the operations results in more detail and a complete existing conditions traffic queuing analysis.

Signalized Intersection Operations Analysis. Based on the signalized intersection analysis, more than half of the study intersections operate at acceptable conditions during the peak hours analyzed (weekday AM and PM peak hours, Saturday peak hour). However, the following three signalized intersections operate at overall unacceptable conditions under the existing conditions for the time periods noted:

- K Street NW/Whitehurst Freeway NW eastbound off-ramp and 27th Street NW/Rock Creek Parkway northbound off-ramp (Intersection #9) during the weekday AM and PM peak hours
- I Street NW and 27th Street NW (Intersection #10) during the weekday AM peak hour

- Thompson’s/Virginia Avenue NW and Rock Creek Parkway (Intersection #13) during the Saturday peak hour

The details for individual signalized intersection approaches that operate under unacceptable conditions during the noted peak hour are depicted and described in the TIA (appendix B).

Unsignalized Intersection Operations Analysis. Based on the unsignalized intersection analysis, the intersection of K Street NW/Rock Creek Parkway southbound off-ramp and 29th Street NW (Intersection #8) would operate at overall unacceptable conditions during the weekday AM peak hour. Additionally, the westbound approach of the same intersection would operate at unacceptable conditions during the weekday AM peak hour and Saturday peak hour. The remaining unsignalized intersections would operate at overall acceptable levels of service under existing conditions.

Visitor Use and Experience

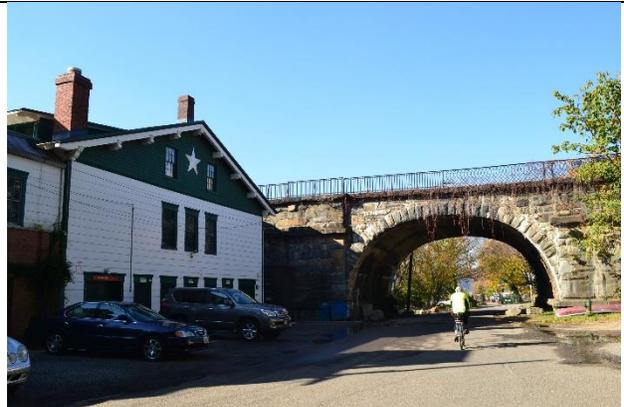
VISITOR EXPERIENCE

The project is located at a connection point between the developed city waterfront and the more pastoral setting of the C&O Canal NHP. Visitors walking westward from the lively Washington Harbour, which is full of restaurants and shops, begin to experience a gradual lessening of development. Continuing west, visitors encounter Georgetown Waterfront Park, a developed park area, past Key Bridge Boathouse and Potomac Boat Club, and then cross through a threshold as they pass through the Alexandria Aqueduct into a more natural setting. At this point, development lessens and trees and greenery increase. This signifies the transition from developed waterfront to parkland and the start of the Potomac Gorge, which extends for 15 miles from Theodore Roosevelt Island to Great Falls. The C&O Canal NHP also continues onward for 184.5 miles along the Potomac River. Visitors are able to see and experience nature in this portion of the park, while still having easy access to a developed downtown area.

Currently, circulation and the transition between the CCT and Water Street NW can be confusing for users and often results in dangerous conflicts between different types of visitors. Cyclists, pedestrians, and vehicles often come into conflict along Water Street NW because there is not a clear delineation of where each mode of transportation should occur. While accessibility and circulation inform visitor experience, detailed discussion for both of those topics is provided in the “Transportation” section.



*Rural character west of the Alexandria Aqueduct
(Source: Louis Berger)*



*Potomac Boat Club and urban character east of the Alexandria Aqueduct
(Source: Louis Berger)*



*View of the western end of the zone and the Washington Canoe Club from the Virginia shore of the Potomac River
(Source: National Park Service)*

VISITOR USE

Substantial boating activity occurs on the Potomac River offshore from the project area, where favorable currents and winds combine to create ideal flat water conditions. The flat water upstream of Key Bridge and the natural shoreline that provides a safe exit from the water attract large numbers of paddlers and rowers who make heavy use of the Potomac River in this area. Multiple crew teams practice in the area daily during the rowing season. In addition, several rowing regattas are conducted each year, involving both high school and collegiate racing teams. The Washington Canoe Club organizes canoe races, and Key Bridge Boathouse conducts guided tours in the area. Motorboats also use the project area, primarily on weekends when the Three Sisters Islands attract moored yachts. While there are established race courses and guided tour routes and customary “rules of the river” to guide where paddlers, rowers, motorboats, racers, practicing athletes, and individual rowers or paddlers are expected to be, inexperienced boat paddlers, rowers, and motorboat operators sometimes come into conflict. Boat launching within the project area primarily occurs from the docks at the Washington Canoe Club, the Potomac Boat Club, and Key Bridge Boathouse. It also is possible to launch from Thompson’s, to the southeast of the project area.

The project area offers a variety of visitor use opportunities and several facilities, including a boat rental facility, two private boating clubs (the Potomac Boat Club and the Washington Canoe Club), and the CCT. The boating facilities within the project area and Thompson’s provide recreational space for a large number of the DC area’s nonmotorized boat users.

Capital Crescent Trail

The CCT is a regional multiuse trail that extends from Georgetown in Washington, DC, to Silver Spring, Maryland. Although not directly within the project area, the C&O Canal towpath is worth mentioning because it is located just north of the CCT and parallels the trail for approximately 4 miles as it continues northwest on the Potomac River. Several connections exist between the two trails.

Users of both trails include walkers, joggers, cyclists, and rollerbladers. There is significant cross-town commuter bicycle traffic along the CCT accounting for the majority of use within or near the project area. About 1.5 million people visit the CCT per year and 400,000 visit the C&O Canal towpath (Coalition for the Capital Crescent Trail 2006).

In addition to commuters and athletic users, visitors engaged in bird watching, photography, and passive nature appreciation frequently use the trails and the undeveloped area to the north.

Washington Canoe Club

The Washington Canoe Club is a private boating club within the C&O Canal NHP that was established in 1904 to promote canoeing and kayaking. Although the club is open to the public for sponsored competitions and other events throughout the year, general use of the club is limited to members. In addition to boat storage and launch space for members, the Washington Canoe Club has a variety of programs, including an outrigger canoe program, sprint kayak program, and youth programs.

According to the 2013 feasibility study, the Washington Canoe Club has 322 members. Between member and guest visits, visitor use is estimated at 29,300 visits per year. An additional 1,500 visitors are estimated during the club's regatta events (NPS 2013).

Potomac Boat Club

The Potomac Boat Club is a private rowing club established in 1869. Use of the club is open to members only, except during regattas and other events. The club provides members with boat storage, locker rooms, and launch space. In addition to private membership, the Washington-Lee High School crew team, a public high school in Arlington, Virginia, stores its boats and launches out of the club. Potomac Boat Club programming includes competitive programs for scullers and sweep rowers, a "Learn to Row" program, and also acts as the headquarters for the Charlie Butt Scullers' Head of the Potomac regatta.

According to the 2013 feasibility study, the Potomac Boat Club has 300 active members. Between member and guest visits, visitor use is estimated at 27,000 visits per year (NPS 2013). On a daily basis, approximately 75 people on 3 teams and 25 individual rowers launch from the club each morning and between 100 and 125 Washington-Lee team members launch during the afternoon. One private team launches in the evening, and individual club members launch throughout the day.

Key Bridge Boathouse

Opened in 2013, Key Bridge Boathouse is the NPS concession in the project area. Key Bridge Boathouse offers boat rentals to the public, including canoe, kayak, and standup paddleboards. Private boat storage is available to the public for a fee. Key Bridge Boathouse also offers programming, including kayak, canoe, and paddleboard classes, standup paddleboard fitness classes, and twilight tours. The site was previously occupied by another business, Jack's Boathouse, which offered similar services and programming.

According to the 2013 feasibility study, an estimated 4,000 visitors from escorted tours and 36,000 visitors from individual rentals and private boat storage use Key Bridge Boathouse (NPS 2013).

Rock Creek Park and Georgetown Waterfront Park

Rock Creek Park administers portions of the project area, which are adjacent to the approximately 10-acre Georgetown Waterfront Park, also administered by Rock Creek Park. Georgetown Waterfront Park features an interactive arched fountain, steps leading down to the waterfront, a pergola with benches, and an interactive labyrinth. In addition to the activities associated with the interactive features, the steps and benches provide space for boat enthusiasts and spectators to watch boaters every day and during regattas. Georgetown Waterfront Park also provides a valuable connection between the trails and parkland to the west (C&O Canal and CCT) and the Rock Creek Park trail system to the east, allowing recreational users and non-vehicular commuters continuous access through the city.

Thompson Boat Center

Thompson's is a NPS concession at the eastern end of Georgetown beyond Georgetown Waterfront Park at the confluence of Rock Creek and the Potomac River. This concession provides public access for

nonmotorized boaters. Thompson’s offers rentals, boat storage, rowing programs, and lessons, and hosts numerous regattas throughout the rowing season. Rentals include rowing shells, kayaks, canoes, and bicycles. Boat storage is available both for private slip rental for boats no longer than 35 feet and rowing shells (up to 58 feet). Currently both the Georgetown University and George Washington University rowing teams row out of Thompson’s. Additionally, 10 scholastic teams, 5 local rowing/paddling clubs, and 6 miscellaneous nonmotorized boating groups also use the center. Thompson’s offers rowing lessons for beginners and longer programs for intermediate and more advanced rowers. The center also is available for rental for those wishing to host a regatta. Visitor use at Thompson’s is broken out in table 3.

TABLE 3. VISITOR USE AT THOMPSON BOAT CENTER

Type of Use	Number of Uses/Year
Independent Paddling (private slip holders and rentals for canoe and kayak)	66,380
Independent Rowing (private slip holders and lesson participants, assuming 100 slip holders x 90 times/season, and 8,760 “Learn to Row”/month for 8 months)	79,080
Scholastic Rowing (assuming 850 athletes x 5 days/week for 26 weeks)	110,500
Collegiate Rowing (assuming 280 athletes x 6 days/week for 26 weeks)	43,680
Regattas (assuming 600 athletes x 7 times/year)	4,200

Source: NPS 2013

Although exact daily estimates are difficult, during stakeholder interviews conducted as part of the 2013 feasibility study, stakeholders estimates that between 60 to 75 private slip holders, 100 to 150 renters, 40 to 60 lesson participants, 800 to 850 scholastic students, and 250 to 300 collegiate students use the facility on a daily basis during the season. Users are dispersed throughout the day with collegiate students generally launching in the early morning, lessons in the late morning, scholastic students in the mid-afternoon (3:00 p.m.) and individuals throughout the day.

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

This “Environmental Consequences” chapter analyzes both beneficial and adverse impacts that would result from implementing the alternatives considered in this EA. This chapter describes the methods used to analyze impacts, including cumulative impacts. The resource topics presented in this chapter and the organization of the topics correspond to the resource discussions contained in “Chapter 1: Purpose and Need”, and “Chapter 3: Affected Environment.”

General Methodology for Analyzing Impacts

In accordance with Council on Environmental Quality regulations, direct, indirect, and cumulative impacts are described (40 CFR 1502.16) and the impacts are assessed in terms of context and intensity (40 CFR 1508.27). Where appropriate, mitigating measures for adverse impacts also are described and incorporated into the evaluation of impacts.

TYPE OF IMPACT

The potential impacts of both alternatives are described in terms of type, as follows:

- **Direct:** Impacts that would occur as a result of the proposed action at the same time and place of implementation (40 CFR 1508.8).
- **Indirect:** Impacts that would occur as a result of the proposed action but later in time or farther in distance from the action (40 CFR 1508.8).
- **Cumulative:** Impacts defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions” (40 CFR 1508.7).
- **Beneficial:** A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
- **Adverse:** A change that declines, degrades, and/or moves the resource away from a desired condition or detracts from its appearance or condition.

CUMULATIVE IMPACTS ANALYSIS METHOD

Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions” (40 CFR 1508.7). The temporal scale for the cumulative impacts analysis assumes past actions have been captured in the affected environment and focuses on current and reasonably foreseeable future actions. The geographic scale considered for cumulative impacts is generally the vicinity of the project area, with some extension, including along Water Street NW and nearby in Georgetown, as well as in the river as far downstream as Daingerfield Island, where the proposed Arlington Boathouse could be located.

Cumulative impacts are determined for each impact topic by combining the impacts of the alternative being analyzed and other past, present, and reasonably foreseeable actions that also would result in beneficial or adverse impacts. Because some of these actions are in the early planning stages, the evaluation of cumulative impacts is based on a general description of the projects. Past, present, and reasonably foreseeable actions to be included in the cumulative impacts analysis were identified through the internal and external project scoping processes and are summarized below.

CUMULATIVE PROJECTS

- **Georgetown Waterfront Park:** Georgetown Waterfront Park is a 10-acre park that runs along the Georgetown waterfront between 30th and 34th Streets NW. The Georgetown Waterfront Park Master Plan established the nonmotorized boathouse zone in 1985. The park was built in two phases—the first phase was completed in 2006, and the second phase was completed in 2011. The site had been a parking lot and storage area for salt and trash trucks (FoGWP 2016).
- **Thompson Boat Center:** Thompson’s is currently the only public nonmotorized boat facility for competitive teams in Georgetown. The facility was dedicated in 1960, and its use has increased over the years. Its capacity is described in the “Visitor Use” section of chapter 3.
- **Arlington Boathouse at the GWMP:** A new nonmotorized boathouse is proposed at the GWMP in Virginia, at either Rosslyn or South of the 14th Street Bridge. The boathouse would provide storage for rowing and paddle craft. This project is considered for water resources, transportation, cultural resources, and visitor use and experience; however, the project is in the planning phase and no date has been set for construction.
- **Condominium Development at Water Street and 34th Street NW:** This 38-unit condo development would be in the existing building on the northwest corner of 34th and Water Street NW. This project is considered for transportation, cultural resources, land use, and visitor use and experience.
- **DC Streetcar Project:** The proposed line from Union Station to Georgetown would route the streetcar along K/Water Street NW, to the intersection with Wisconsin Avenue NW. This project is considered for transportation, cultural resources, land use, and visitor use and experience.
- **DC Water Clean Rivers Project:** This large capacity tunnel to be constructed beneath Georgetown would store stormwater runoff during large weather events and greatly reduce and possibly eliminate combined sewer overflow events on the Potomac River. Additionally, other tunnels are planned and being constructed in other parts of the combined sewershed. Although originally planned to extend below the C&O Canal NHP, the tunnel is now planned to stop outside the zone. This project is considered for water resources.
- **West Heating Plant Conversion:** The former West Heating Plant at 29th Street NW, between K Street NW and the canal, is being redeveloped as residences for the adjacent Four Seasons Hotel. Its capacity is not clear at this time; the developer has been in negotiations with the city and others about landmark status for the building. This project is considered for transportation, cultural resources, land use, and visitor use and experience.
- **C&O Canal Dock and Improvements:** The C&O Canal NHP is proposing to install a dock along the canal near Key Bridge. The project would include stairs down from the bridge, a dock, and restoration of the canal boat. This project is considered for cultural resources and visitor use and experience.

Water Resources

METHODOLOGY AND ASSUMPTIONS

Water Quality

The NPS *Management Policies 2006* (NPS 2006b) state that NPS would “take all necessary actions to maintain or restore the quality of surface waters and groundwater within the parks consistent with the Clean Water Act and all other applicable federal, state, and local laws and regulations” (sec 4.6.3).

A water quality standard defines the water quality goals of a waterbody by designating water uses, setting minimum criteria to protect these uses, and preventing degradation of water quality through anti-degradation provisions. The anti-degradation policy is only one portion of a water quality standard. Part of this policy (40 CFR 131.12(a) (2)) strives to maintain water quality at existing levels if it is already better than the minimum criteria. Anti-degradation should not be interpreted to mean that “no degradation” can or would occur because even in the most pristine waters, degradation may be allowed for certain pollutants as long as it is temporary and short term.

Potential impacts on water quality were focused on the expected extent of disturbance to the river bank and nearshore river bottom/sediments from construction and the potential for soil erosion from disturbance of the banks. Analysis of possible impacts on water quality was based on on-site inspection of the resource within the project area, review of existing literature and water quality standards, information provided by NPS and other agencies, and professional judgment.

Wetlands

NPS has adopted a policy of “no net loss” of wetlands. Executive Order 11990, “Protection of Wetlands,” states that federal agencies are to avoid to the extent possible long-term and short-term impacts associated with the destruction or modification of wetlands and avoid direct and indirect support of new construction in wetlands whenever practical alternatives exist. USACE regulates development in wetland areas pursuant to section 404 of the Clean Water Act (33 CFR, Parts 320–330).

Impact analysis and the conclusions for possible impacts on wetlands were based on review of existing literature and studies and information provided by park staff and other agencies. Where possible, locations of wetlands were overlain with the proposed site development activities to determine impacts on wetlands.

Floodplains

The action alternatives would be implemented within existing regulatory floodplain throughout the project area. Impacts on floodplain functions and values were therefore assessed for all the alternatives/sites. These assessments were based on the known and potential 100-year and 500-year floodplains within the study area, review of existing literature and studies, information provided by NPS experts and other agencies, and professional judgment.

Executive Orders 11988, “Floodplain Management” (May 24, 1977), and 13690 (January 30, 2015), which amended Executive Order 11988, require federal agencies to take action to reduce the risk of flood loss; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the national and beneficial values served by floodplains in carrying out their responsibilities for managing and disposing of federal lands. Before taking an action, an agency must determine whether a proposed action would occur in a floodplain; if so, consideration must be made of alternatives to avoid adverse effects and incompatible development in floodplains to the extent possible.

NPS is required to protect and preserve the natural resources and functions of floodplains, avoid long- and short-term effects associated with the occupancy of the floodplains, and avoid direct or indirect support of floodplain development that could adversely affect the natural resources and function of floodplains or increase flood risks. When it is not possible to locate development outside the floodplain, a Floodplain Statement of Findings is required (appendix C), and NPS must take all reasonable actions to minimize impacts of these actions.

STUDY AREA

The study area for water resources is the project area itself, as well as the adjacent Potomac River. Consideration is given to the combined sewer drainage area.

IMPACTS OF ALTERNATIVE 1: NO-ACTION ALTERNATIVE

Under the no-action alternative, the new boathouse facilities would not be constructed, so the project area would remain unchanged. Currently no stormwater management facilities exist, so runoff would not be controlled, but there would be no new impacts on water quality from stormwater runoff under current conditions.

There would be no impacts on SAV beds or non-vegetated riverine wetlands, and the palustrine wetland on site A would not be disturbed. No changes would occur that would affect floodplain functions or values.

Cumulative Impacts

Because there would be no impacts on water resources from the no-action alternative, there would not be any cumulative impacts on water resources.

Conclusion

There would be no noticeable impacts on water quality, wetlands, or floodplain function and values under the no-action alternative. Because there would be no impacts on water resources from the no-action alternative, there would not be any cumulative impacts on water resources.

IMPACTS OF ALTERNATIVE 2: DEVELOP THE NONMOTORIZED BOATHOUSE ZONE

Water Quality

Under alternative 2, some new development would be possible on four of the sites. If the most intense options were selected, three new boathouses and a fourth boat storage facility would be added to the landscape, resulting in a footprint of up to 26,100 SF for additional structures. However, because sites D and E, which would receive the two largest structures, have a large area of existing impervious surface, the maximum additional impervious surface would be an additional 9,870 SF, including 6,270 SF of new building, plus a new approximately 3,600 SF plaza. EISA Section 438, requires that agencies maintain pre-development hydrology when developing facilities that are larger than 5,000 SF either by retaining the 95th percentile rainfall event or using site-specific hydrologic analysis. The District of Columbia's stormwater rule requires similar treatment, as does the District of Columbia Stormwater Memorandum of Understanding, of which NPS is a signatory (DDOE 2013a, b). Stormwater management methods would include the maximum use of pervious pavement, green roofs, and other practices that minimize water quality-related issues. Combined with the minimal use of impervious pavement, these methods would maximize on-site stormwater infiltration. These practices would reduce the load on the combined sewer system, which would indirectly benefit water quality by reducing the likelihood of overflow events that degrade water quality in the river. Improvements to flows into the combined sewer system from the implementation of the boathouse zone would not be large in the context of the overall system, but would contribute locally.

Any new facility at site C, whether is it a smaller facility with one or two small structures or a larger boathouse, would need to be designed to allow access to the overflow at that site to allow for maintenance and protection against future overflow events until the Potomac River storage tunnel is constructed.

All construction would comply with the District's sediment and erosion control requirements and use appropriate practices to control the flow of water, minimize sediment runoff during construction, and minimize erosion. Construction would also include practices for minimizing increased sediments in the water column during construction of the bulkheads. Each project would require a sediment and erosion control plan, and the sites would be subject to inspection and plan enforcement. Practices include short-term solutions such as hay bales, installation of silt fencing, sediment traps, and basins; and temporary

seeding or mulching of areas with exposed soils if they will be exposed for a long time during construction (DDOH 2003; DDOE 2013a).

Palustrine and Riverine Wetlands and Submerged Aquatic Vegetation

Under alternative 2, it is likely that there would be a new bulkhead built at site E, and a replacement bulkhead at site D (approximately 530 linear feet for both sites). Particularly at site E, the bulkhead could be constructed into the river as far out as the USACE bulkhead line, which is the legal property boundary certified by USACE (a property boundary survey and further consultation with USACE to confirm the bulkhead line would be necessary). However, it is likely that the bulkhead would be placed much closer to shore than the legally allowable extent, and efforts would be made to minimize encroachment into the water. A bulkhead or riprap could also be necessary to accommodate the proposed boathouse on that site under this alternative. Bulkheads would be constructed of sheetpiling, and fill would be placed behind them.

Fill in the shallow riverine wetlands behind the bulkhead would occur if necessary to allow for more flexibility in configuring the boathouses. The need for fill would not be known until the facilities are designed. Based on GIS property boundary information, under the worst case scenario, an area of up to .28 acres may be filled, however, based on GIS calculations of the area of submerged lands between the shore and the approximated legal bulkhead line, it is anticipated that no more than approximately .1 acre would be necessary, mostly at site E, if fill is required at all. Due to the depth of water, the disturbance of areas classified as riverine wetlands would be less than .1 acre. Silt curtains, coffer dams, or other approved practices for in-water construction would minimize the amount of sedimentation that would enter the water column.

Impacts on SAV could occur under this alternative. SAV was recorded in 2014 and 2015 adjacent to sites A and B, although a visual inspection in 2016 during the wetland delineation did not reveal SAV in these areas (VIMS 2016). Any SAV present could be disturbed by the creation of the walk-in launch area on site A, although most of the work would take place on land. NPS or permitting agencies could stipulate that work be done in the fall and winter when the plants are dormant. Appropriate screening such as a sediment curtain or coffer dam could also be used to prevent sediment from entering the open water adjacent to the work and blocking light to the SAV. The area would be surveyed prior to construction to confirm whether SAV is present at that time. If SAV were found prior to construction, impacts could include shading in some areas from new dock structures, the potential for temporary increases in turbidity that could affect SAV, and the unlikely potential that fill could be placed on top of SAV if any submerged lands are reclaimed between the USACE bulkhead line and the shore and SAV is present. Mitigation would include establishing a buffer around the SAV beds to the extent possible and conducting and placing fill outside the growing season.

Assuming docks are approximately 10 feet wide, a total of up to 7,750 SF of new dock space would be installed at sites C, D, and E. The new docks would be secured using removable dock anchor poles that could be placed by hand. Based on observational and navigational chart data (NOAA 2016), water depths fall quickly below 10 feet moving into the river and away from the bulkhead at these locations. As such, those areas defined as riverine wetlands are relatively small. Riverine wetlands are defined as the wetland/deepwater habitat boundary at a depth of 6.6 feet at low water or at the limits of emergent or woody vegetation extending beyond this depth (Cowardin et al. 1979). As a result, the area of the dock spanning any riverine wetland would be negligible (75 to 100 square feet). The dock anchors would have a minimal impact on riverine wetlands. The new docks would also shade habitat in this area; however, because this area is relatively small in the scheme of the larger setting, impacts would be minimal.

Permits for construction and fill in the river and required mitigation would be required. The USACE, Baltimore District, issues permits for proposed marinas, bulkheads, docks, piers, and commercial and institutional facilities located partially or wholly in a waterbody in the Chesapeake Bay watershed or any action requiring fill in a waterbody. A section 10 permit (for work in, over, or under a navigable water of

the United States) is required. NPS permits any action affecting the river bottom and would review plans potentially impacting the river bottom. USACE would initiate coordination and consultation with the US Department of the Interior, the US Environmental Protection Agency, and the National Oceanic and Atmospheric Administration. If portions of a building must be located within a waterway, it is important to determine the level of impact associated with the proposed action. If the impact is minor, it is more likely that a permit for construction will be approved. On the other hand, if USACE determines that there would be a significant effect, the permitting process may be more involved and require additional mitigation.

There would be very limited impacts on the incidental palustrine wetland on site A from these water dependent proposed actions. The structure and trails would be sited to avoid wetlands to the extent possible; at worst, only about 1,900 SF would need to be filled or disturbed to place the boat storage facility on site A and another 1,280 SF to construct a boardwalk trail over the wetlands (0.07 acre overall, not all of which would be permanent disturbance; the boardwalk over the wetlands would not exceed 160 feet in length). Permanent impacts to this wetland would not exceed 0.07 acre. Approximately 75 linear feet of shoreline would be contoured for a walk-in “soft” paddle craft launch. Riparian vegetation would be removed to accommodate the soft launch along the shore. This area is not wetland, but is adjacent to riverine wetlands, so techniques such as coffer dams would be used for any grading or soil movement at the shoreline edge to prevent indirect effects of siltation on nearby wetlands. Trees removed along the shorefront or to build the storage facility would be replaced at a 1:1 ratio. Because disturbance would only be 0.07 acre, and permanent impacts for the trail would be much less than the 1,280 SF the boardwalk would cover, it is likely that mitigation of wetlands disturbance would not be required. If the site were developed with only the trail, approximately 1,280 SF could be disturbed, although the trail would be aligned to minimize disturbance and a boardwalk would be to minimize the need to fill in the wetlands, so the actual permanent impacts on the trail would be much less than 1,280 SF and would be related to placement of footings for the boardwalk.

Floodplains

As discussed in the “Affected Environment” section, the entire project site is located within a 100-year floodplain. There would be up to approximately 30,300 SF of new structures within the zone under alternative 1. Boathouse facilities are water-dependent, and therefore appropriate for placement in the floodplain. With the exception of the storage facility on site A, the larger facilities would be built on slab and would not contain any habitable areas. These structures would all be constructed on piles and elevated to 2 to 3 feet above the base flood elevation. If the smaller facilities were placed on site C, these facilities would be placed on slab. Boat storage would be available on the ground floor below the habitable areas of the structures. These structures would be designed so the ground floor areas have flow-through construction and tear-away walls, so that the flood waters could flow through the structures and not impede floodplain function. Because of the conceptual nature of the plan for the zone at this time, a more specific study would be required at the time of design for each boathouse. However, a 2004 study examined the effect of a large boathouse structure proposed at the time at the western end of the zone on the C&O Canal and the floodplain. The study concluded that the proposed structure would have no impact on the floodplain and would not increase the water surface level, velocity, or shear stress appreciably during floods (Patton, Harris, Rust and Associates 2004).

Under this alternative, floodplain values would be only slightly affected with the placement of the 2,700 SF storage facility on the site or not affected at all with the placement of only a trail or boardwalk. It is conceivable that the use of permeable pavers on the public plazas on sites C, D, and E would slightly increase the ability of the site to capture increased flows, although development in the zone would not improve wildlife habitat. Placement of smaller structures on site C would also affect floodplain function and values less than if a larger facility were placed there, and the structures could be designed to allow floodwaters to flow through them or to be removable if a flood is imminent, minimizing adverse effects on floodplain functions and values at that site.

Cumulative Impacts

All of the cumulative actions except the DC Streetcar Project have the potential to impact water quality in the study area, although all the construction projects would comply with local or federal stormwater and sediment and erosion control regulations, so the impacts would be minimal, if slightly adverse. The Potomac River Tunnel that is part of the DC Water Clean Rivers Project would result in substantial, beneficial impacts on both water quality and floodplains along the river by capturing and storing large amounts of stormwater and substantially reducing the number of combined sewer outflow events in the Potomac River. The construction of Georgetown Waterfront Park in the 2000s provided localized benefits to water quality because it converted the 10-acre site from impervious surface to a mostly landscaped and vegetated space. Limited impacts on riverine wetlands could occur from dredging related to Arlington Boathouse, particularly if the Rosslyn site is chosen, because the area is so shallow. Impacts from alternative 2 include minimal, adverse effects on water quality, wetlands, and floodplains. Overall, cumulative impacts on water quality and to a lesser extent on floodplains would be beneficial because of the benefits provided by the Potomac River Tunnel. There would be slight adverse impacts on wetlands. Implementation of alternative 2 would contribute a small, beneficial increment to the overall cumulative impact on water quality. The contribution of adverse impacts on water quality, wetlands, and floodplains from implementation of this alternative to the cumulative impacts on wetlands and floodplains would be slightly noticeable, resulting in overall slightly adverse impacts on wetlands and floodplains, although these impacts would be mitigated.

Conclusion

Under alternative 2, stormwater would be managed to minimize potential impacts on water quality over the long term; short-term construction impacts on water quality would be minimized with the use of sediment and erosion control practices and in-water practices to minimize suspension of sediments in the water column. Although there would be new structures in the floodplain, impacts on the floodplain function would be minimal because of the construction techniques used. Additionally, stormwater management practices such as pervious pavement would be used to minimize adverse impacts on floodplain values. Impacts would be short- and long-term and adverse on approximately .07 acre of palustrine wetland and 75 linear feet of shoreline improvements on site A to allow for a soft launch area for paddle craft. In addition, the installation of bulkheads at site E, and possibly at site D, with potential fill behind them of up to approximately .23 acre would have short- and long-term, adverse impacts. Wetlands would be mitigated according to the conditions of the permit requirements to be determined in the future. The use of appropriate construction techniques would result in minimal impacts on floodplain functions, while the use of stormwater management practices such as pervious pavement would minimize adverse impacts on floodplain values. Implementation of alternative 2 would contribute a small, beneficial increment to the overall cumulative impact on water quality. The contribution of adverse impacts to the cumulative impacts on wetlands and floodplains would be slightly noticeable, resulting in overall adverse impacts on wetlands and floodplains, although these impacts would be mitigated.

Director's Order 77-1: *Wetland Protection* and Director's Order 77-2: *Floodplain Management*, which provide direction on complying with Executive Orders 11988 and 11990, respectively, require that a Statement of Findings be prepared when a proposal would result in adverse impacts on floodplains or wetlands and detail the requirements and procedural elements associated with Statements of Findings. A combined Statement of Findings is included in Appendix C.

Historic Structures and Districts

METHODOLOGY AND ASSUMPTIONS

Federal actions that have the potential to affect cultural resources are subject to a variety of laws and regulations. The NHPA of 1966, as amended, is the principal legislative authority for managing cultural resources associated with NPS projects. Generally, section 106 of the NHPA requires all federal agencies

to consider the effects of their actions on cultural resources listed and/or determined eligible for listing in the NRHP. Such resources are termed “historic properties.” In addition, the NHPA requires that federal agencies take action to minimize harm to historic properties that could potentially be adversely affected by a federal undertaking. Agencies must consult with the state historic preservation officer; Tribal historic preservation officer, if applicable; the Advisory Council on Historic Preservation, as required; and other interested parties in an effort to avoid, minimize, or mitigate adverse effects. Agreement on mitigation of adverse effects on historic properties is reached through consultation with relevant agencies, including the state historic preservation officer, the Tribal historic preservation officer, and the Advisory Council on Historic Preservation, where appropriate. The Assessment of Effects report under NHPA is included as appendix D.

In addition, NPS is charged with the protection and management of cultural resources in its custody. This is furthered through the implementation of Director’s Order 28: *Cultural Resources Guideline* (NPS 1998), *NPS Management Policies 2006* (NPS 2006b), and the 2008 *NPS Programmatic Agreement with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers* (NPS 2008c). These documents charge NPS managers with avoiding, or minimizing to the greatest degree practicable, adverse or other negative impacts on park resources and values. Although NPS has the discretion to allow certain impacts in parks, that discretion is limited by the statutory requirement that park resources and values remain unimpaired, unless a specific law directly provides otherwise.

NPS guidance for evaluating impacts, the NPS NEPA handbook (NPS 2015a), requires that impact assessment be scientific, accurate, and quantified to the extent possible. For cultural resources, it is rarely possible to measure impacts in quantifiable terms; therefore, impact assessment must rely heavily on the professional judgment of resource experts. The analyses of effects on cultural resources that are presented in this section respond to the requirements of NEPA. An assessment of effect under section 106 is being conducted separately, but concurrently with the NEPA effort. This NHPA analysis has informed the analysis of impacts on historic structures and districts within this EA.

STUDY AREA

The study area for this analysis coincides with the APE that was determined during the section 106 process. According to the section 106 regulations (36 CFR 800), an APE is defined as the geographic area or areas in which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking. A separate assessment of effects was prepared in compliance with section 106 and submitted to the District of Columbia Historic Preservation Office (DC HPO) for review.

Both a primary and secondary APE have been delineated for the project as depicted in figure 10. The primary APE encompasses the proposed project area, extending from 34th Street NW at the western edge of Georgetown Waterfront Park to approximately 0.25-mile upriver from Key Bridge in the District of Columbia. The primary APE is likely to experience direct impacts while the secondary APE considers potential indirect and cumulative impacts on surrounding historic resources adjacent to the project area. The western, northern, and eastern boundaries of the secondary APE north of the Potomac River coincide with the Georgetown Historic District boundary. The secondary APE extends east to 27th Street at K Street NW then follows Virginia Avenue NW to the south. The boundary proceeds south behind the Watergate Complex and the John F. Kennedy Center for the Performing Arts. The southern edge of the secondary APE follows Roosevelt Bridge and the southern boundary of the GWMP.

IMPACTS OF ALTERNATIVE 1: NO-ACTION ALTERNATIVE

Under the no-action alternative, no new nonmotorized boathouse facilities would be constructed, and capacity for nonmotorized boating on the Potomac River in Georgetown would remain the same.

Negotiations and plans to rehabilitate the Washington Canoe Club would continue, and it is foreseeable that the rehabilitation would occur. Since no action would be taken, the project would have no direct or indirect impacts on historic resources.

Cumulative Impacts

No cumulative impacts would occur under the no-action alternative because there would not be any impacts.

Conclusion

The no-action alternative would not affect cultural resources because the existing conditions would remain. No new facilities would be constructed and no changes would occur to the shoreline of the Potomac River. The alternative would have a possible beneficial impact on the Washington Canoe Club because the building's rehabilitation would be completed according to the Secretary of the Interior's standards. There would be no cumulative impacts under the no-action alternative.

IMPACTS OF ALTERNATIVE 2: DEVELOP THE NONMOTORIZED BOATHOUSE ZONE

Under alternative 2, direct impacts would occur as a result of the proposed rehabilitation of the Washington Canoe Club. However, given that the rehabilitation would be conducted according to Secretary of the Interior's standards, the impact would be beneficial because it would improve the overall condition of the property and preserve character-defining features of the historic building. Direct impacts also would occur as a result of the installation of a viewing terrace on top of the Alexandria Aqueduct and boat storage below the aqueduct arch. Again, these activities would be reviewed by the DC HPO and would therefore follow the Secretary of the Interior's standards. Construction of new facilities at sites C, D, and E, and possibly a small structure at site A would have direct impacts on the setting of the Washington Canoe Club, Potomac Boat Club, Alexandria Aqueduct, and Key Bridge with the construction of new buildings as well as the introduction of a cul-de-sac. As noted above, the historic setting of these resources along the Potomac once included boathouses in some of these locations that are no longer in existence. Therefore, the change in setting is not drastically different than what it was historically. The historic period setting east of the Alexandria Aqueduct has already been changed by the elevated Whitehurst Freeway. Because all of the construction activities would occur south of the CCT with no disturbance to the existing vegetation between the CCT and the C&O Canal, there would be no direct impacts on the C&O Canal.

The Georgetown Historic District would experience direct impacts with the introduction of three to five new non-contributing buildings or structures into the district, depending on the final design for each site. Given that there are approximately 340 contributing buildings within the historic district, the introduction of these modern buildings would not alter the characteristics of the historic district that make it eligible for listing under Criteria A and C and significant as a national historic landmark. The introduction of these modern buildings would not substantially diminish the district integrity of setting given the limited visibility between Prospect Street NW and the shoreline. In addition, the designs of any new buildings would be reviewed by the DC HPO and the Commission of Fine Arts (CFA) and Georgetown Historic Preservation Review Board, which would ensure their appropriateness within the Georgetown Historic District.

Indirect impacts on historic resources in the vicinity of the zone would occur as a result of the change in the built environment along the shoreline of the Potomac River. The view of the shoreline from the GWMP between Key Bridge and the N. Lynn Street onramp would be altered with construction of the new boathouses. However, this development would only alter the setting of the GWMP slightly and would not alter the characteristics of the historic district that contribute to its eligibility under Criterion C.

Historic districts in the vicinity, including the Theodore Roosevelt Island Historic District and the Rock Creek and Potomac Parkway Historic District, would only have a limited view of the proposed

development because Key Bridge would block much of the view. The additional proposed boathouses would have an indirect impact by slightly altering the setting of these districts. However, this change to the setting would be negligible in the scale of the overall landscape.

Similarly, the NRHP-listed Watergate Complex and John F. Kennedy Center for the Performing Arts would have limited views of the construction activities associated with alternative 2 because of obstructions such as Theodore Roosevelt Island and Key Bridge. These resources would be indirectly affected by altering the setting, but the impact would be negligible because of the limited views and would not alter the characteristics of either property that make them eligible for the NRHP.

Cumulative Impacts

Only one new building is included in the cumulative projects: the proposed Arlington Boathouse at GWMP. This project would have an adverse impact because it would introduce a new boathouse along the river in an area that was not historically used for boating access. The condominium development on Water Street NW and West Heating Plant Conversion both would use existing buildings. These projects would have a beneficial impact because they would rehabilitate the existing buildings according to the Secretary of the Interior's standards. The DC Streetcar Project would presumably be constructed within existing rights-of-way and would somewhat alter the setting along Water Street NW and thus has the potential to adversely impact historic resources. The C&O Canal Dock and Improvements also would alter the setting but to a smaller degree; these alterations have the potential to adversely impact historic resources. The adverse and beneficial impacts of the cumulative projects and the negligible impact of alternative 2 would result in an overall, negligible cumulative impact. Alternative 2 would contribute an imperceptible incremental impact to the cumulative impacts because the project would have no adverse impact on historic resources.

Conclusion

Alternative 2 would have direct and indirect impacts on historic resources within the primary and secondary APEs. However, none of the impacts would alter the eligibility for listing in the NRHP of any of the historic resources. Direct impacts within the primary APE would be beneficial to the Washington Canoe Club and would not alter the characteristics of the Georgetown Historic District, C&O Canal, Washington Canoe Club, Potomac Boat Club, Alexandria Aqueduct, and Key Bridge that make each resource eligible for listing in the NRHP. Indirect impacts on resources within the secondary APE involve altering the setting of historic resources. However the impact would not alter the significant characteristics of the GWMP, Theodore Roosevelt Island Historic District, Rock Creek and Potomac Parkway Historic District, Watergate Complex, and John F. Kennedy Center for the Performing Arts that make these resources eligible for listing in the NRHP. The adverse and beneficial impacts of the cumulative projects and the negligible impact of alternative 2 would result in an overall, negligible cumulative impact, with alternative 2 contributing an imperceptible adverse increment to overall cumulative impacts.

Land Use and Accessibility to Adjacent Residential and Other Uses

METHODOLOGY AND ASSUMPTIONS

Land use and zoning impacts attributable to a project are determined by changes to the site and the surrounding area, including changes in density and use, induced development, spurred revitalization, increased vacancy, and effects on adjacent properties in the zone. Such changes are typically a function of the scale of the alternative, proximity of other uses to the study area, existing zoning, the availability of vacant or underutilized land, the condition of surrounding buildings, and outside land use plans for the area.

To evaluate impacts on land use and zoning, information was obtained from Washington DC Office of Planning (DCOP 2011) in conjunction with the local and regional land use plans described in chapter 3 to draw qualitative conclusions about impacts under each alternative.

STUDY AREA

The study area for land use is the project area itself and the neighborhood of Georgetown.

IMPACTS OF ALTERNATIVE 1: NO-ACTION ALTERNATIVE

Area Land Use Plans

Under the no-action alternative, no new nonmotorized boathouse facilities would be constructed, and the site would remain unchanged. Additionally, privately owned property in the middle of the site would remain, and the Potomac Boat Club would continue its operations. Because no new construction would occur on the site, the no-action alternative would result in no change to the land uses. Minor inconsistencies with the Comprehensive Plan for the National Capital and CapitalSpace's plan would continue, but there would be no discernable impact.

Adjacent Properties

Because there would be no changes to any of the sites, there would be no impacts on adjacent properties.

Cumulative Impacts

Because there would be no discernable impacts on land use or adjacent properties under the no-action alternative, there would be no cumulative impacts.

Conclusion

Because no changes to the site would occur, the no-action alternative would result in no impacts on land use or adjacent properties. As a result, the long-term, mostly beneficial impacts with some adverse impacts of this alternative, in conjunction with the long-term, beneficial, cumulative impacts of present and reasonably foreseeable future actions, would result in long-term, beneficial and adverse, cumulative effects. Because there would be no impacts on land use or adjacent properties under the no-action alternative, there would be no cumulative impacts.

IMPACTS OF ALTERNATIVE 2: DEVELOP THE NONMOTORIZED BOATHOUSE ZONE

Adopted Land Use Plans

Comprehensive Plan for the National Capital. The enhanced pedestrian access and improved public spaces associated with alternative 2 would align with the Comprehensive Plan's recommendations to provide publicly beneficial uses on large sites and promote active street life, public spaces, and pedestrian friendly streets.

The proposed development would direct growth and new development to achieve economic vitality; provide public benefit uses on large sites, with a focus on water recreation; and promote active street life, public spaces, and pedestrian friendly streets. Alternative 2 also would align with the Comprehensive Plan because it would construct the nonmotorized boathouse mentioned in the location-specific land use plan for Georgetown. Because of the consistencies between the two plans, the impact on land use would be beneficial.

CapitalSpace. Alternative 2 would align with CapitalSpace's recommendations for parks in the District. To strengthen the park system, CapitalSpace recommends implementing greenways to link parks and make them destinations. Alternative 2 would create new public spaces and connect the site with Georgetown Waterfront Park, which would align with the CapitalSpace goals. Alternative 2 also would

enhance the urban natural areas by providing mores access to the Potomac River, enhance Center City parks, and transform small parks via the public spaces developed under this plan. As such, alternative 2 would align with CapitalSpace’s plan, resulting in a beneficial impact on land use.

Zoning. Under alternative 2, NPS would own any structure constructed and would therefore be exempt from zoning regulations. However, if NPS were to lease out one of the structures, or if the site fell under private ownership as a result of a land exchange, and no public access was provided, the site would become subject to zoning regulations. In this scenario, any construction on the site would need to align with the zoning ordinances, with the caveat that additional pedestrian activity could increase noise for area residents and be considered objectionable, and height and setback restrictions could differ and affect the form of the development on the sites. This would be of concern for sites D and E, because they are outside the C&O Canal NHP and would be most likely of all the sites to host facilities with dedicated tenants that might desire to limit public access. However, considering the existing pedestrian activity and the expected minimal noise that visitor rowing would produce, area residents are not expected to object. Therefore, there would be no impacts on zoning.

Accessibility to Adjacent Residential and Other Uses

Under this alternative, new boating facilities would be developed on either side of the townhouses and the Potomac Boat Club. Changes to the configuration of Water Street NW would occur with the installation of a cul-de-sac and conversion of the area in front of the club and townhouses into a plaza to improve the transition to and from the trail and the road and to accommodate more users. The design would accommodate vehicular access for the private properties and the existing private parking. The Potomac Boat Club and townhouses would remain under private ownership, and measures would be put in place to retain easy and safe access to their parking and homes; however, the new road configuration would result in limited vehicular access to the area beside the privately owned property. Additionally, the newly configured roads would result in more pedestrian and cycling traffic that would be mitigated through signage and markings on the trail. As a result more visitors to the zone, the new configuration of Water Street, and increased pedestrian activities between the traffic circle and the aqueduct, the increased traffic and limited vehicular access combined with development of the zone would result in some long-term, potentially adverse impacts on the adjacent privately owned properties related to changes in access to the properties. In the scenario that the townhouses in site D become available to NPS, the Potomac Boat Club would still experience limited adverse impacts related to changes in access patterns, although it is expected that the impacts would decrease over time as new patterns and habits are established in the area. Properties across Water Street NW would also be affected by the street configuration change, but to a lesser extent. Curb cuts would remain, and improvements to sidewalks and pedestrian access could provide benefits to these properties.

Cumulative Impacts

Other past, present, and reasonably foreseeable projects in the area that may affect land use include the DC Streetcar Project, condominium development on Water Street NW, the C&O Canal Dock and Improvements, and the West Heating Plant Conversion. The development on Water Street and the West Heating Plant Conversion would bring more pedestrians in the area and would contribute to the Comprehensive Plan’s vision of a more active street life in downtown DC. With the addition of more pedestrians, the DC Streetcar Project would allow for more connectivity from Georgetown and other portions of the city and would create an additional connection between parks, which aligns with the goals of both Comprehensive Plan and CapitalSpace’s plan. The C&O Canal Dock and Improvements would improve programming in the park and create a better experience for the public, which would also align with CapitalSpace’s initiative to build stronger parks in downtown Washington DC. The condominium redevelopment would theoretically have a beneficial effect on that property. The long-term, mostly beneficial impacts of alternative 2 and limited adverse impacts on adjacent properties, in conjunction with the long-term, beneficial, cumulative impacts of past, present and reasonably foreseeable future actions,

would result in overall long-term, beneficial, cumulative impacts. Alternative 2 would contribute an imperceptible increment to the overall cumulative impacts.

Conclusion

Alternative 2 would be consistent with the recommendations provided in both the Comprehensive Plan for the National Capital and CapitalSpace's plan, which would result in beneficial impacts. All structures proposed would be NPS-owned and therefore exempt from zoning. As a result, the long-term, adverse impacts of this alternative, in conjunction with the long-term, beneficial, cumulative impacts of present and reasonably foreseeable future actions, would result in a long-term, beneficial, cumulative effect. Alternative 1 would contribute an imperceptible, beneficial increment to the overall cumulative impact.

Transportation

METHODOLOGY AND ASSUMPTIONS

The purpose of this impact analysis is to assess the effects of the alternatives on the transportation systems both within the project area and within the larger area that would be affected by the alternatives, as noted in the "Study Area" section. The following modes or elements of transportation were analyzed as a part of this EA and in the accompanying TIA report (appendix B): traffic, pedestrian network, bicycle network, transit, parking, and truck and bus access. Prior to initiating the transportation analysis, NPS, DDOT, and the project team met to determine what analysis tools, data parameters, and assumptions would provide the basis of the analysis.

DDOT, through its comprehensive transportation review process (DDOT 2012), requires that a scoping form be approved prior to analysis outlining the agreed upon level of detail, data parameters, and type of analysis. These parameters and assumptions include a study area, trip generation, trip distribution, modal split, analysis years, analysis methods, and no-action transportation assumptions (background growth, planned developments, and planned roadway improvements). Attachment 1 of the TIA contains the DDOT scoping form with these details.

The first step to determine transportation impacts was to monitor the current use of the transportation systems, including counts of vehicles, pedestrians, and cyclists. These results are documented in the TIA and summarized in the "Affected Environment" section above. Next, background transportation trips through the EA analysis study year (2020) were evaluated using information from reasonably foreseeable developments in the nearby area, proposed improvements to the transportation infrastructure (e.g., roadway, sidewalk, transit, bicycle, and parking improvements), and background growth of the roadway system. The background transportation trips through the EA analysis study year, 2020, added to the existing conditions traffic counts, constitutes the no-action alternative, or alternative 1. Because alternative 1 includes transportation trips of reasonably foreseeable projects, the impacts of alternative 1 and alternative 2, which builds on this alternative, inherently include cumulative impacts.

Transportation analyses must include these other reasonably foreseeable projects (many of which are cumulative projects) in the no-action alternative because the no-action alternative is the baseline against which the future alternatives are analyzed. If alternative 1 does not include the background traffic growth and projects that will be permitted by the time the proposed action is implemented, the traffic impacts of normal background traffic growth and the impacts the other nearby projects will have on traffic could be attributed to the proposed action. Therefore, alternative 1 isolates all future expected growth so that alternative 2 only includes the impacts of the proposed action itself. Analyzing transportation in this way isolates the impact the proposed action itself from the impacts of other projects.

Transportation impacts of alternative 2 were established by determining the number of additional trips and transportation network road changes that would be generated by the proposed development and other improvements in the study area; this step is called trip generation. The number of trips generated by the proposed action were then divided into their associated mode of transportation based on transportation

modal splits that are typical of the proposed use of the project (e.g., 90% drive alone, 5% use bicycles, and 5% walk). For alternative 2, modal split varied based on each project user group, as described below in the “Traffic” section and in the TIA. Once the trips were divided by mode, the additional vehicle trips generated by the implementation of the boathouse zone were then added to the alternative 1 traffic values in a process called trip distribution to determine impacts for alternative 2. Trip distribution attributes future project trips to roads based on typical user travel patterns and percentages of users on each roadway in the project area.

Because this transportation section is based on the analysis in the TIA, which itself is based on agreements with NPS and DDOT, the full detailed TIA reflects only the worst-case scenario of trips generated from implementing the most intense action alternative as originally developed in the DDOT scoping form for the project. This scenario is now best described as the most intense outcome of the range of development described in alternative 2, including the option for the expanded facility on site D, if the privately owned townhouses become available for development, and a boathouse facility on site C. The largest facility on site C is now shown as somewhat smaller than the original facility in the DDOT scoping form, and the impacts of alternative 2 as described below would be less intense than those analyzed in the TIA because the proposed maximum size of some of the facilities, notably on sites C and D, has decreased since the original scoping with DDOT.

In the alternative 2 analysis, some existing users of Thompson’s (i.e., Virginia-based high schools, Georgetown and George Washington Universities) might relocate to a new facility in Georgetown or Arlington and would be replaced by new athletic users from other high schools or universities. The alternative 2 analysis assumes that a high school would replace a university slot at Thompson’s and thus convert some walking trips to vehicle trips for the Virginia Avenue NW and 27th Street NW at I Street NW intersections. Therefore, the Saturday peak period is studied for these intersections, as well as all other intersections in the traffic study area, to reflect new rental users accessing Thompson’s as access to the waterfront is improved along both sides of the Potomac River. No change from present conditions is assumed for private users storing their boats at Thompson’s.

STUDY AREA, REASONABLY FORESEEABLE DEVELOPMENT, AND PLANNED IMPROVEMENTS

The transportation study areas are described in “Chapter 3: Affected Environment,” within the “Transportation” section of that chapter.

For the reasons discussed above, analysis of transportation impacts must include planned transportation improvements and reasonably foreseeable projects in the study area that are usually considered as part of cumulative effects for other resource topics.

Planned Developments and Roadway Improvements

The following section describes the planned developments and the background roadway improvements that were included in the analysis of transportation impacts for alternative 1, as described in the “Methodology and Assumptions” section above. More details on these projects are included in the TIA (appendix B). All developments are located adjacent to or in the study area.

- **3220 Prospect Street NW** would include the addition of 10 parking spaces, redevelop the existing surface parking lot with 27,600 SF of retail space, and include an on-street loading zone (Wells + Associates 2015).
- **2715 Pennsylvania Avenue NW** would include redevelopment of an existing gas station into 43,395 SF of luxury residential units (Rodgers 2015a).
- **John F. Kennedy Center for the Performing Arts Expansion** would expand the existing building by providing an additional 60,000 SF of space for performing art purposes, including classrooms, rehearsal rooms, and event spaces (Stantec 2013).

- **Old Lantham Hotel** would involve redeveloping this former hotel into 150 apartment units and 12,000 SF of retail space. The site is located on M Street NW between Thomas Jefferson and 30th Streets NW (Nelson Nygaard 2014).
- **Water Street Residential Development** would include redeveloping a building at the intersection of Water and 34th Streets NW into a 38-unit condominium building (Rodgers 2015b).
- **Watergate Hotel Renovation**, which was completed in the spring of 2016, has increased the number of rooms from 251 to 348 and added a drinking place and restaurant, but still occupies 265,000 SF (Cooper 2014). The hotel is located along Virginia Avenue between 25th and 27th Streets NW.

DDOT has plans for four roadway or transit improvements in the secondary (vehicular) study area in the future (MWCOG 2015). All four projects, described in detail in the TIA, would result in no changes to the roadway network. The projects include the following:

- Rehabilitation of I-66 Ramp to Whitehurst Freeway over Potomac Parkway and Rock Creek
- Implementation of Union Station to Georgetown Premium Transit (K Street Transit) along K Street NW, requiring modifications to the existing lane geometry to accommodate a light rail streetcar traveling with traffic
- Rehabilitation of ramp from Whitehurst Freeway to Potomac Freeway
- Replacement of 31st Street NW Bridge over the C&O Canal

Pedestrian Network

Only one project in the primary study area is expected to be completed by 2020—a residential redevelopment at the intersection of Water and 34th Streets NW. While some of the improvements associated with the District-wide Bicycle and Pedestrian Management Program, including sign and lighting upgrades to benefit pedestrians (MWCOG 2015), may be located within the study area, the details and locations of these future improvements are not yet known.

Bicycle Network

DDOT plans to construct a number of bicycle facilities throughout the District, including new cycle tracks, bicycle lanes, trails, and contra-flow bicycle lanes. The TIA includes a table with the planned bicycle facilities in the primary study area and within a 1-mile radius of the primary study area as presented in the moveDC: Bicycle Element (DDOT 2014a). Note that although the District has proposed many new bicycle lanes, trails, and cycle tracks, all facilities may not be implemented. Of the improvements noted in the report, DDOT is currently (2015/2016) studying the possibility of a cycle track along Pennsylvania Avenue NW between 17th and 22nd Streets NW (DDOT 2015b).

In addition to bicycle facilities, the 2015 District of Columbia Capital Bikeshare Development Plan recommends expanding four bicycle share stations located within 1-mile of the primary study area by adding more docks (DDOT 2015c). The District also recommends expanding the Capital Bikeshare station network over the next three years (DDOT 2015c). Within the primary study area, one new station is planned along Georgetown Waterfront Park just several blocks from the project area. Within the larger 1-mile area surrounding the primary study area, approximately eight or nine new station locations are proposed.

Transit

If the Union Station to Georgetown Premium Transit streetcar project (K Street Transit line, part of the larger DC Streetcar Project) were implemented along K Street NW in the primary study area by 2020, the

service would offer new transit options for non-vehicular study area trips. The 3-mile transit corridor for this transit line would run between Union Station and Georgetown, extending the current transit corridor on H Street NE. The recommended alternative would travel east along K Street NW toward Georgetown, continue underneath the Whitehurst Freeway, and end at the intersection of K Street NW and Wisconsin Avenue NW in Georgetown (DDOT 2013). However, given the funding allocated in the most recent budget for the DC Streetcar or K Street Transit line, “it appears that the funding needs for a line to Georgetown ‘will extend beyond’ the proposed capital improvement plan” (Laris 2015).

According to the 2014 *DC Circulator Transit Development Plan Update* report, the DC Circulator system would have several routes in the primary study area and surrounding 0.25-mile area (DDOT 2014c). The *DC Circulator Transit Development Plan Update* recommends implementing the Georgetown – Union Station Extension to the National Cathedral and the Dupont – Georgetown-Rosslyn Extension to U Street/Howard University. Both of these changes are recommended for implementation in Phase I of improvements, or fiscal year 2015–2017 (near-term). Depending on the procurement of additional vehicles, the *DC Circulator Transit Development Plan Update* also recommends a new National Cathedral – McPherson Square Metro route that would overlap with a shortened Georgetown – Union Station route. These proposed route changes are discussed in the TIA.

In addition to the route adjustments, the system evaluation of the DC Circulator system in the *Transit Development Plan Update* identifies several opportunities to improve the existing DC Circulator routes (DDOT 2014c). More details on these improvements are discussed in the TIA. It is likely that DDOT would work to implement these improvements as needed among the current routes. It is also assumed that there would be ongoing local bus changes through WMATA’s Better Bus Program, a program that covers service and route changes to improve the bus operations for all passengers (WMATA 2016).

Trucks and Buses

No known changes to truck and bus circulation or loading in the project area, the primary study area, or the larger 0.25-mile surrounding area are proposed.

IMPACTS OF ALTERNATIVE 1: NO-ACTION ALTERNATIVE

This section describes the impacts of the no-action alternative, or the baseline condition, if the zone and associated planned development were not implemented. Under alternative 1, no changes are proposed to be made within the project area itself. Therefore, only changes that are planned or reasonably foreseeable outside of the project area but within the study area or extended 0.25 or 1 mile study areas noted in “Chapter 3: Affected Environment” are described.

Pedestrian Network

Under alternative 1, no substantial changes to the volume of pedestrian activity or substantial changes to existing pedestrian infrastructure near the project area are anticipated. Impacts on the pedestrian network under alternative 1 would be negligible for both the project area and the primary study area because alternative 1 does not include additional development within the project area and no increase in pedestrians from the project area is anticipated other than normal annual growth.

Bicycle Network

No increase in bicycles from the project area are anticipated other than normal annual growth. With the increase of Capital Bikeshare station docks and stations within 1 mile of the primary study area and the possibility for additional bicycle infrastructure improvements as planned by DDOT, some improvements to the bicycle network within the primary study area and the surrounding 1-mile area would occur under alternative 1. The annual background growth in cyclists through 2020 would be expected in both the project area and larger study area, especially with the introduction of a Capital Bikeshare station at or near Georgetown Waterfront Park.

Under alternative 1, impacts on the bicycle network in the project area would be adverse because of additional cyclists adding to the already confusing conditions of the project area. Impacts on cyclists within the larger primary study area and 1-mile surrounding area under alternative 1 would be beneficial because new planned bicycle facilities would create capacity and routes for bicyclists.

Transit

Minimal new development under the no-action alternative in the study area would result in a minimal increase in transit trips from the project area; these trips would be roughly equivalent to normal annual growth. By 2020, as part of alternative 1 but not as a result of the project, local bus ridership in the transit study area would increase as a result of increased development within the Georgetown area, local bus route changes (DC Circulator and WMATA), and increases in background vehicular traffic. Any increase in future transit riders would be spread across multiple bus lines, new or rerouted DC Circulator lines, and the K Street Transit line if implemented; therefore, any increase in ridership, although expected to be minimal, would cause negligible impacts and would be accommodated in future route planning. At the same time, the planned improvements to the DC Circulator lines through the study area may increase overall transit options for users in the study area given the rerouting of lines. Any adverse impacts that do materialize for buses (increased passengers or delays in traffic) are likely to be addressed with the new DC Circulator changes and as service providers make regular service and route adjustments to lines to accommodate changing ridership patterns, traffic conditions, and funding availability. If the K Street Transit line were implemented, additional transit options would be available in the form of an east-west streetcar line across most of the city. Therefore, overall, impacts on transit under alternative 1 would be negligible for both the project area and the primary study area. With implementation of the K Street Transit line, these impacts would change to beneficial because of the added transit opportunities provided.

Trucks and Buses

Because so few changes to truck and bus circulation or loading are anticipated in the project area, impacts on trucks and buses under alternative 1 would be negligible for both the project area and the primary study area.

Parking

Without implementation of the K Street Transit line, impacts on parking under alternative 1 would be negligible for both the project area and the primary study area because no parking changes are expected within the project area or primary study area, and parking demand would only increase minimally as a result of nearby development projects. With implementation of the K Street Transit line, impacts on parking under alternative 1 would be adverse for the primary study area because 75 parking spaces would be removed on K Street NW between Wisconsin Avenue and 29th Street (DDOT 2013). While the decrease in on-street parking would have an adverse impact on parking, the increase in transit provided by the streetcar would allow drivers alternative ways to easily access the area. It should be noted, however, that the current status of the DC Streetcar Project is behind schedule, and it is unlikely that the K Street Transit line would be implemented in the primary study area by 2020.

Traffic

Alternative 1 includes growth in existing traffic volumes through 2020, various programmed transportation improvements in the study area, and trips generated by approved and unbuilt development projects (the latter two are discussed above). These and other traffic inputs are then used to evaluate the traffic operations. The TIA includes full documentation on the detailed methods and data sources for determining the various traffic inputs, including background growth for all alternatives, and alternative 1 trip generation, modal split, and trip distribution.

Traffic Operations Analysis for Alternative 1: No-Action Alternative. The results of the alternative 1 operations analysis are summarized in this section. The TIA contains tables and graphics depicting the full operations results in more detail as well as the alternative 1 traffic queueing analysis.

Based on the signalized intersection analysis, more than half of the study intersections operate at acceptable conditions during the peak hours analyzed (weekday AM and PM peak hours, Saturday peak hour). However, the following three signalized intersections operate at overall unacceptable conditions under alternative 1 for the time periods noted:

- K Street NW/Whitehurst Freeway NW eastbound off-ramp and 27th Street NW/Rock Creek Parkway northbound off-ramp (Intersection #9) during the weekday AM and PM peak hours and Saturday peak hour
- I Street NW and 27th Street NW (Intersection #10) during the weekday AM peak hour
- Thompson Boat Center/Virginia Avenue NW and Rock Creek Parkway (Intersection #13) during the Saturday peak hour

The individual signalized intersection approaches that operate under unacceptable conditions during the noted peak hour are individually called out in the TIA and shown in figures. Based on the unsignalized intersection analysis, the intersection of K Street NW/Rock Creek Parkway southbound off-ramp and 29th Street NW (Intersection #8) would operate at overall unacceptable conditions during the weekday AM peak hour. Additionally, the westbound approach of the same intersection would operate at unacceptable conditions during the weekday AM peak hour and Saturday peak hour. The remaining unsignalized intersections would operate at overall acceptable levels of service under alternative 1.

There would be unacceptable operating conditions at one intersection for one new peak hour period under alternative 1 (Intersection #9 would now fail during the Saturday peak hour, where it did not fail in the existing conditions).

Traffic Summary for Alternative 1: No-action Alternative. Overall traffic impacts under alternative 1 would be adverse but very minimal within the secondary traffic study area because of the additional poor operations of one additional intersection during one peak hour time period. Within the project area, overall impacts on traffic would be negligible compared to existing conditions.

Cumulative Impacts

All of the cumulative projects except the DC Water Clean Rivers Project have the potential to affect transportation, although the proposed Arlington Boathouse would only indirectly affect transportation in the study area. As noted in the “Methodology and Assumptions” section above, because alternative 1 includes transportation trips for reasonably foreseeable projects, the impacts of alternative 1 inherently include cumulative impacts. However, the West Heating Plant Conversion and C&O Canal Dock and Improvements were not included in the transportation alternative 1 (no-action alternative) projects because during the transportation scoping process, they were determined to not be developed substantially enough to determine transportation impacts. Georgetown Waterfront Park provides a multiuse trail through the park and along the road, which benefits cyclists using the area. It also provides an additional attraction that brings visitors to the waterfront area, which has likely served to increase traffic in the area.

Alternative 1 itself would have negligible transportation impacts on pedestrians, transit, buses, and parking; minimal but adverse impacts on traffic; adverse impacts within the project area on cyclists; and beneficial impacts on cyclists within the larger study area. If the K Street Transit line were implemented by 2020, transit area impacts would be beneficial and parking impacts would be adverse. Therefore, excluding the two cumulative projects not deemed reasonably developed (West Heating Plant Conversion and C&O Canal Dock and Improvements) and the one project that would only indirectly impact transportation in the study area (Arlington Boathouse), the incremental contribution of the no-action alternative on the impacts from the cumulative transportation projects would be imperceptible.

Conclusion

Alternative 1 would result in minimal or no changes to the pedestrian network, transit, trucks and buses, and parking. Under the no action alternative, no new bicycle facilities would be added in the project area. However, as a result of regular background growth, new bicycle facilities would be added in the nearby area over time. This would add cyclists in the project area without project area bicycle improvements and add additional traffic in the secondary study area without related traffic improvements. As a result of increased bicycle facilities and traffic described above without corresponding street infrastructure improvements, there would be negligible impacts for pedestrians, transit, trucks and buses, and parking; adverse impacts for traffic; and adverse impacts within the project area and larger study area for cyclists. If the K Street Transit line were implemented by the city by 2020, transit area impacts would be beneficial, and parking impacts would be adverse. In conjunction with cumulative projects included in the alternative 1 analysis, the contribution of additional cumulative impacts would be negligible.

IMPACTS OF ALTERNATIVE 2: DEVELOP THE NONMOTORIZED BOATHOUSE ZONE

Under alternative 2, new boating facilities would be developed and new users would be attracted to the zone, generating a large number of new trips to and within the project area during many months of the year. These additional trips would affect all components of the transportation system, including traffic, transit, pedestrians, and bicycles. The transportation analysis is based on the TIA, which itself is based on agreements with NPS and DDOT. Therefore, the full detailed transportation impact analysis performed reflects development of the highest density implementation of the zone that was originally developed for the project, which includes the larger boathouse option at site D and a full boathouse at site C. The boathouse at site C in the TIA is a little larger than is presented in this EA, because of the evolution of the alternatives after the TIA was written. The scenario analyzed includes the components noted in table 4.

TABLE 4. ALTERNATIVE 2 WITH OPTION: HIGH DENSITY SCENARIO DEVELOPMENT COMPONENTS

Site Letter	Description
A	2,700 SF
B	Existing Washington Canoe Club
C	10,200 SF (now 6,000 SF)
D	7,800 SF (replaces the existing Key Bridge Boathouse concession) (now 3,600 to 7,200 SF)
E	13,800 SF
Total	34,500 SF

Because a smaller facility would be developed on site C, the impacts of alternative 2 would be less intense than those analyzed in the TIA.

Pedestrian Network

Alternative 2 includes a new separated multiuse trail along the south side of Water Street NW that would connect the CCT to the Georgetown Waterfront Park Trail. This CCT extension would transition from 16 feet wide west of the Alexandria Aqueduct to 10 feet east of the aqueduct and continue on the south side of Water Street NW between the Whitehurst Freeway columns, connecting to Georgetown Waterfront Park. Alternative 2 also includes the addition of multiple public plazas. These plazas would improve pedestrian access to existing docks and provide additional access to the water via future docks, thereby improving the overall environment for users.

Under alternative 2 the sidewalks on either side of Water Street NW from just east of the Key Bridge overpass to the new cul-de-sac would be extended, and the authorized access driveway areas would be made clear to users in the area. These additions would significantly reclaim space for pedestrians and support the additional users that would be generated from the proposed development. Public pedestrian access to site A would be provided across the Washington Canoe Club apron area, and additional

pedestrian amenities would be provided in the form of orientation and interpretive exhibits, picnic tables and grills, public restrooms, a rental kiosk, and seasonal outdoor boat storage.

Alternative 2 would draw additional pedestrians to and through the area because of increased capacity of the boathouses, additional recreational features, and the formalized connection between Georgetown Waterfront Park and the CCT. Users of both area trails and visitors of the boathouses in the study area would now have a dedicated multiuse path that is clearly demarcated from vehicles, improving safety for all users.

In summary, impacts on the pedestrian network in the project area would be direct and beneficial under alternative 2 because the alternative would include substantial improvements to the pedestrian environment, and any increase in pedestrians would be accommodated with the new multiuse trail extension, additional sidewalks, pedestrian priority areas, and plazas. Impacts on the pedestrian network in the larger study area outside the zone would be negligible compared to alternative 1 because pedestrian improvements would not occur outside of the project area. Any increase in pedestrians from the project in areas outside of the zone may cause increased congestion at times on sidewalks that have obstructions (Whitehurst Freeway support columns) or are narrower than the recommended 6- or 10-foot-wide width. However, the adjacent Georgetown Waterfront Park Trail would allow pedestrians alternate options for travel during those times.

Bicycle Network

Under alternative 2, bicycle accommodations in the project area would improve with the introduction of the multiuse trail extension between the CCT and Georgetown Waterfront Park. Because cyclists currently share the road with vehicles between these two points, the designated trail for cyclists and pedestrians would improve safety by separating these users from vehicular traffic. However, cyclists would have to share the trail with pedestrians, which at times may mean congestion and slight delays, both of which are typical for urban mixed-use trails. Cyclists would have the option of traveling on Water Street NW in vehicular lanes once they reached the cul-de-sac, offering potential increases in speed if the multiuse trail is crowded.

Alternative 2 likely would draw additional cyclists to and through the area with the increased capacity of the boathouses, additional recreational features, and the formalized connection between Georgetown Waterfront Park and the CCT. Alternative 2 would also likely include the provision of bicycle racks to support existing and future users; however, the location of these racks is yet to be determined.

Impacts on the bicycle network in the project area would be direct and beneficial under alternative 2 because implementation of the action alternative would improve the bicycle environment and the overall safety of cyclists even with an increase in bicyclists. While additional cyclists and pedestrians in the project area may cause congestion at times, cyclists would have the option to share Water Street NW with vehicles as an alternate path. Because no bicycle improvements are proposed outside of the project area for alternative 2, there would be impacts on the bicycle network in the larger primary study area and 1-mile surrounding area from an increase in the number of cyclists. However, although the number of cyclists may increase in areas outside of the project area from alternative 2 causing increased congestion at times on trails, the time periods of congestion would be minimal and negligible compared to alternative 1. Although any increase in cyclists from alternative 2 to areas outside of the project area may cause increased congestion at times on trails, the time periods of congestion would be minimal. Additionally, the network of streets in the Georgetown area with relatively low vehicle volumes and travel speeds would allow cyclists alternate options for travel, and new proposed DDOT facilities would provide additional travel options and capacity as they are implemented.

Transit

Impacts on transit in the project area, primary study area, and surrounding 0.25-mile area would be negligible under alternative 2 because alternative 2 would have no physical impacts on transit. Although transit users may increase slightly as a result of the increased amenities and programming, the increase in users cannot be quantified and should not have an adverse impact on transit. Implementation of the action alternative would increase traffic in the area, so minimal delays may accrue to transit. However it is assumed that bus routes, scheduling, and stop locations would be planned and updated as conditions require, as new bus routes are introduced (DC Circulator), and as bus routes are adjusted periodically by operators (e.g., WMATA's Better Bus Program).

Trucks and Buses

This section provides a summary of the truck and bus operations and impacts under alternative 2. More details on the truck and bus analysis can be found in the TIA.

Project Area Access – Trucks and Emergency Vehicles. Similar to existing conditions and given the constraints of the project area, truck access would primarily be limited to smaller delivery and service vehicles. Trucks would use the two designated loading areas at the 34th Street plaza to the east of the boathouse on site E, the plaza/apron east of the aqueduct (north of the Potomac Boat Club, adjacent to the cul-de-sac), and the DDOT designated loading zones nearby, if needed.

Properties to the west of the Alexandria Aqueduct would be accessible only to authorized vehicles via a gate underneath the aqueduct. Given the limited width of the access driveway, vehicles would need to drive in and back out so that they do not interfere with the CCT. Emergency vehicle access is discussed in the TIA.

Project Area Access – Buses. Buses would not be able to turn around in the 60-foot diameter cul-de-sac and would be limited to using the same loading areas as trucks if allowed and if sufficient space is available. It is likely that only small buses could operate within the designated loading zones in the project area. Therefore, the only other way for buses to access the project area under alternative 2 would be via multi-point turns in the cul-de-sac or driving in and reversing direction down Water Street NW, which would cause conflicts with other area users. With permission from DDOT, other non-intrusive bus drop-off areas could be explored (i.e., loading zones near the project area, nearby driveway pull-off areas, or local bus stops) provided school buses would not conflict with other buses.

Under alternative 2, the bus parking spaces that are currently located in the project area on the south side of Water Street NW would be removed. Until other future bus parking spaces are designated near the project area, buses servicing the project area would need to park at the next nearest permitted area for bus parking.

Project Area Loading. Designated loading zones have been designed at the 34th Street plaza east of the boathouse on site E and at the plaza/apron east of the aqueduct (north of the Potomac Boat Club and west of the cul-de-sac). To minimize conflicts between uses in the congested loading zone areas, traffic calming pavement design similar to those used at Georgetown Waterfront Park would be used to suggest to users where different activities are acceptable and remind all vehicular users to proceed with caution. More details on project area loading are provided in the TIA (appendix B).

Trash collection for properties west of the aqueduct would need to be determined during final site design given the general restriction of non-authorized vehicles beyond the aqueduct. Trash collection for properties east of the aqueduct would best be provided by the smallest trash truck vehicles available.

Rowing Shell Trailer Access. For high schools and universities to take full advantage of the boathouse facilities planned for alternative 2, large rowing shells would need to be delivered to the project area for regattas or for storage at the boathouses for regular use. The largest shells are eight person boats, which are approximately 60 feet long. Methods to allow these boats to be delivered via trailer to the project area

to minimize conflicts with and disturbance to other users, such as pedestrians and cyclists, are explored in the TIA.

Trucks and Buses. Impacts on buses in the project area and the secondary study area would be direct and adverse under alternative 2 because six on-street parking spaces would be eliminated and the area to turn around at the end of Water Street NW would be reduced. Within the project area, impacts on trucks could be adverse as a result of additional constraints or procedures for access (e.g., constraints: Whitehurst Freeway columns, procedures: need to station flagmen to stop or alert CCT users of crossing vehicles as discussed in the TIA), although accommodations have been made to accommodate these vehicles to the greatest extent possible. Within the secondary study area under alternative 2, impacts on trucks also could be adverse, but minimal, given the restrictions to the turn-around area at the end of Water Street NW.

Parking

Standardizing the roadway and parking proposed under alternative 2 would reduce public parking. Alternative 2 would provide 20 to 28 metered parallel on-street parking spaces. These spaces would replace the existing spaces noted in “Chapter 3, Affected Environment,” resulting in a loss of 23 to 31 non-metered 2- and 3-hour parking spaces. Unmarked parking closer to the aqueduct arch would also be removed. The nine private parking spaces for the Potomac Boat Club would be retained. Therefore, excluding private parking spaces, there would be a net reduction of more than nine public parking spaces and approximately six spaces for tour buses.

No designated off-street parking would be provided with alternative 2, with the exception of the nine spaces behind the Potomac Boat Club that already exist. The parking required for the boathouses may be provided on-street or in local garages. Because the demand for car-top boat launching is high, kayak storage lockers in the project area would allow future users to temporarily store their large equipment while they park elsewhere, thereby allowing parking demand to be met off-site.

Development associated with alternative 2 would draw additional users to the site and increase overall demand for both on-street and garage parking. Although on-street parking would be reduced and the nearest parking garage is open during the week but not open on weekends, other parking garages a few blocks farther are open on both weekdays and weekends. Therefore, given sufficient capacity in these area garages, parking demand likely can be accommodated. Parking for future users will be more expensive than before, given the introduction of metered on-street parking where there was none before in the project area and a need for more vehicles to park in garages where prices can be higher. Parking also may be slightly farther from the project area than under alternative 1, given the need to use more garage parking.

Therefore, impacts on parking in the project area under alternative 2 would be adverse and direct, given the reduction in parking availability and a substantial increase in demand. However, parking has been accommodated in the project area to the greatest extent possible given site constraints and the creative temporary kayak storage areas for unloading that would allow the parking needs to be met elsewhere. Within the primary study area and 0.25-mile surrounding area, impacts on parking would be negligible because the multitude of parking garages in the area should be able to accommodate the majority of the increased demand, even though this off-site parking may require users to pay slightly more and walk slightly farther for parking.

Traffic

The future projected traffic analysis is based on the highest density alternative (i.e., worst-case scenario), which includes the larger boathouse on site D, and a boathouse on site C. More details on the traffic analysis can be found in the TIA.

Alternative 2 Roadway Design. The proposed design for Water Street NW from 34th Street NW to the end of the street on the west includes two travel lanes (12.5 feet in width each), 36 total metered parallel

parking spaces (7 feet wide), and a 60 foot diameter cul-de-sac. This design would formalize the parking and street section on the western end of Water Street NW. The curbs on the cul-de-sac would be mountable to allow authorized vehicles to access the Potomac Boat Club, private residences, and properties west of the Alexandria Aqueduct. A gate across the authorized access driveway under the aqueduct, south of the CCT, would ensure only authorized vehicles have access beyond the aqueduct via the 10-foot-wide NPS driveway that extends to site B. The addition of these improvements would help to ensure unauthorized vehicles no longer access areas that are not intended for public vehicular use. Note that vehicles should not cross the CCT without proper notification to trail users in both directions and other necessary safety precautions. In the case that any vehicle would need to cross the CCT or mixed-use trail through the project area, DDOT procedures for temporary construction closure should be followed.

Trip Generation. Custom trip generations were calculated for the different proposed boathouse users. These include athletes from the area high schools and universities, public use (users with their own boats and privately stored at a future boathouse), and recreational public rentals. A separate analysis covers the AM peak hour and PM weekday peak hour representing the early morning and late afternoon rowing demand, as well as a Saturday peak hour analysis representing the private use and recreational rental demand.

The worse-case scenario for trip generation in the zone would include development of a 34,500 SF of boathouse, as originally detailed in the DDOT scoping form process (see appendix 1 of the TIA). The primary assumption is that the available space would be divided evenly between athletic use, rental use, and private use (users with their own boats and storage) (i.e., one-third of the total square footage divided among the three user groups). The future area for each user group was used in combination with other trip generation data collected to determine the total number of trips that would be expected under alternative 2. Further trip generation detail can be found in the TIA. All user groups were combined to develop a total forecasted trip generation. Based on the assumptions, between 585 and 764 total AM and PM peak hour person trips, respectively, are estimated to be generated by the proposed high density scenario. On a typical Saturday, an estimated 825 person trips would be generated during the afternoon peak hour. Table 5 contains a weekday peak hour summary of all user group's trip generation results. Table 6 contains a Saturday peak hour summary of all user group's trip generation results.

TABLE 5. WEEKDAY AM AND PM PEAK HOUR TRIP GENERATION BY USER GROUP

User	Independent Variable	Time Period	IN	OUT	TOTAL
Rental	Square footage of facility (11,500 SF)	AM Peak	24	24	48
		PM Peak	57	57	114
Athlete	Number of athletes	AM Peak	0	388	388
		PM Peak	465	0	465
Private User (Store at Boathouse)	Number of boat storage racks (Institute of Transportation Engineers Land Use Code 420)	AM Peak	64	37	101
		PM Peak	64	62	126
Private User (Bring own Boat)	Parking spaces and temporary storage lockers	AM Peak	31	17	48
		PM Peak	30	29	59
TOTAL		AM Peak	119	466	585
		PM Peak	616	148	764

TABLE 6. SATURDAY PEAK HOUR TRIP GENERATION BY USER GROUP

Source	Independent Variable	IN	OUT	TOTAL
Rental	Square footage of facility (11,500 SF)	293	293	586
Athlete	Number of athletes	N/A	N/A	N/A
Private User (Store at Boathouse)	Number of boat storage racks (Institute of Transportation Engineers Land Use Code 420)	73	90	163
Private User (Bring own Boat)	Parking spaces and temporary storage lockers	33	43	76
TOTAL		399	426	825

In addition to new person trips from the construction of new boathouses, existing use at Thompson’s would change to reflect some of the current users moving to either of the proposed Georgetown or Arlington facilities. To be conservative, it is assumed that both universities would move from Thompson’s because they produce pedestrian and bicycle trips only and would be replaced by high schools creating more vehicle trips than currently exist at Thompson’s. Full details of this additional analysis component are included in the TIA.

Details and documentation on the modal split analysis and trip distribution methodology by user group are presented in the TIA. Figures showing all vehicle trips and turning movement volumes for all user groups under alternative 2 are also included in the TIA.

Traffic Operations Analysis. The results of the alternative 2 operations analysis are summarized in this section, while the TIA contains tables and graphics depicting the full operations results and the alternative 2 traffic queueing analysis in more detail.

Previous capacity analysis results in this report note any locations where an overall intersection or intersection approach degraded to unacceptable operations or a failing level of service (this and other thresholds are described in more detail in the TIA). The capacity analysis results for alternative 2 also note any overall intersections or intersection approaches continuing to operate at an unacceptable condition when compared to alternative 1 or where there is an increase in vehicle delay by more than 5 seconds. These instances are noted because DDOT has requested that any instance of these conditions caused by the proposed action be mitigated, in addition to any degradations of operations to unacceptable conditions.

Based on the signalized intersection analysis, compared to alternative 1, more than half of the study intersections operate at acceptable conditions during the peak hours analyzed (weekday AM and PM peak hours, Saturday peak hour). However, the following three signalized intersections would continue to operate at overall unacceptable conditions or conditions that require mitigation under alternative 2 for the time periods noted. See the TIA for details on the operational changes between alternative 1 and alternative 2.

- K Street NW/Whitehurst Freeway NW eastbound off-ramp and 27th Street NW/Rock Creek Parkway northbound off-ramp (Intersection #9) during the weekday AM and PM peak hours and the Saturday peak hour
- I Street NW and 27th Street NW (Intersection #10) during the weekday AM peak hour
- Thompson Boat Center/Virginia Avenue NW and Rock Creek Parkway (Intersection #13) during the Saturday peak hour

The individual signalized intersection approaches that operate under unacceptable conditions during the noted peak hour are individually called out in the TIA and shown in figures.

Based on the unsignalized intersection analysis, the intersection of K Street NW/Rock Creek Parkway southbound off-ramp and 29th Street NW (Intersection #8) would continue to operate at unacceptable conditions during the weekday AM peak hour and would operate at unacceptable conditions during the Saturday peak hour.

Additionally, several individual unsignalized intersection approaches would operate under unacceptable conditions during at least one peak hour; these intersection approaches are discussed in the TIA.

In summary, one signalized intersection would operate with two additional approach failings and two new unsignalized intersections would operate with approach failings.

Traffic Summary. Although impacts on traffic in the project area under alternative 2 would be partially beneficial and direct given the definition of vehicular space where it is currently lacking, these beneficial impacts would be outweighed by the direct adverse traffic impacts that would result from increased traffic in the project area from increased vehicle demand and trips and increased congestion caused by large vehicles operating in a small space. Within the secondary study area, impacts on traffic would be adverse and direct given the additional operational failures created by the additional vehicular trips generated by the alternative.

Cumulative Impacts

All of the cumulative projects except the DC Water Clean Rivers Project have the potential to affect transportation, although the Arlington Boathouse would only indirectly affect transportation in the study area. As noted in the “Methodology and Assumptions” section for Transportation, because alternative 1 (no-action alternative) and alternative 2 include transportation trips of reasonably foreseeable projects, the impacts of alternative 2 inherently include cumulative impacts. However, the West Heating Plant Conversion and the C&O Canal Dock and Improvements were not included in the other reasonably foreseeable transportation projects because during the transportation scoping process, it was determined that they were not developed substantially to determine transportation impacts.

Alternative 2 would have the following impacts within the project area compared to alternative 1: beneficial impacts on pedestrians and cyclists; negligible impacts on transit; and adverse impacts on buses and trucks, parking, and traffic. Alternative 2 also would have the following impacts within the defined study areas compared to alternative 1: negligible impacts on pedestrians, cyclists, transit, and parking; and adverse impacts on buses and trucks and traffic. Therefore, excluding the two cumulative projects not deemed reasonably developed (West Heating Plant Conversion and C&O Canal Dock and Improvements) and the one project that would only indirectly affect transportation in the study area (Arlington

Boathouse), the incremental impacts on transportation from cumulative projects would be imperceptible from impacts associated with alternative 2 because the projects were included in the transportation analysis. However, when the possible additional transportation impacts from the two projects that were deemed not reasonably developed from DDOT's perspective are considered, cumulative impacts may be noticeable and adverse but would be relatively small because of the additional transportation trips in the study area.

Conclusion

Alternative 2 would add bicycle, pedestrian, and traffic facilities and/or improvements in the project area but would inhibit some truck and bus access and take away some parking. Alternative 2 would also result in increased traffic in the project area from additional uses that generate trips and more limited area for vehicles, but would have no measurable impact on transit. Within the project area, alternative 2 would result in added parking and traffic demand without commensurate improvements and reduce overall truck and bus access. Within the larger study area, but outside the project area, alternative 2 would result in minimal or no changes to the transit overall and minimal to no changes for pedestrians, cyclists, and parking. Therefore, alternative 2 would also have the following impacts within the defined study areas compared to alternative 1: negligible impacts on pedestrians, cyclists, transit, and parking (sufficient parking is likely available within the study area for increased parking demand); and adverse impacts for buses and trucks and traffic. In summary, considering all modes of transportation together, there would be direct beneficial impacts to non-vehicular modes of transportation and direct adverse impacts to vehicular modes of transportation. In conjunction with cumulative projects included in this analysis, there would be negligible additional cumulative impacts; however, with the two non-DDOT approved projects noted above, there may be noticeable, adverse, incremental cumulative impacts but they would be relatively small.

Visitor Use and Experience

METHODOLOGY AND ASSUMPTIONS

The purpose of this impact analysis is to assess the effects of the alternatives on the visitor use and experience that would be affected by the project alternatives in and around the project area. To determine impacts, current uses of the area were considered and the potential effects of the construction and implementation of the proposed project alternatives on visitor use and experience were analyzed. Activities and the type of visitor experience and use that occur in the project area and that might be affected by the proposed project alternatives were considered.

STUDY AREA

The proposed improvements would be located in the project area that extends 80 to 100 feet landward from the shoreline and includes approximately 1,500 feet of river frontage from the Georgetown Waterfront Park west to past the Washington Canoe Club. For the impact analysis, the study area for visitor use and experience extends beyond the project area to include Thompson's and considers use on the Potomac River, particularly because this area is influenced by launch activity from the project area.

IMPACTS OF ALTERNATIVE 1: NO-ACTION ALTERNATIVE

The no-action alternative represents a continuation of the existing conditions, operations, and current practices regulating visitor use on the shoreline of the river. Visitors would continue to use the C&O Canal NHP, the CCT, and Georgetown Waterfront Park, as well as the Key Bridge Boathouse concession to access the water, and members of the Washington Canoe Club would continue to use their facility. Interest in nonmotorized boating (canoeing, kayaking, rowing, and paddle boarding) on the Potomac River within the District of Columbia would likely continue to increase, and demand for this sort of recreation would remain unmet. Existing boathouse facilities that provide access to the river and related

amenities would continue to have insufficient capacity. In addition, Thompson's would remain the key access point for a majority of the users, resulting in increased crowding of the facility and associated issues. As a result of increasing demand for waterfront access by nonmotorized boat users and unchanging capacity of current facilities, impacts on visitor use and experience would be long term and adverse and would become increasingly noticeable as demand increases.

The current configuration of the CCT and its connection to Georgetown would remain unchanged. Conflicts between pedestrians, cyclists, and motorized vehicles would continue to occur at this intersection resulting in long-term, adverse impacts on visitor use and experience in the project area.

Cumulative Impacts

Future projects and construction within the project area and surrounding areas, including the Arlington Boathouse, DC Streetcar Project, Water Street condominium development, C&O Canal Dock and Improvements, and West Heating Plant Conversion would contribute cumulatively to visitor use and experience by enhancing existing project area resources, adding new visitor destinations, and providing increased nonmotorized boat user access points. Georgetown Waterfront Park has noticeably improved visitor experience and increased visitor use in the area. However, increased visitor opportunities in and around the project area could result in more intensive use within the area, exacerbating some of the impacts under the no-action alternative such as the user conflicts that occur at the intersection of the CCT with Water Street NW and the C&O Canal towpath. Although the Arlington Boathouse would provide increased access for nonmotorized boat users, demand for access and facilities currently exceeds the existing facilities and is only expected to increase in the future beyond the additional capacity provided by the Arlington Boathouse. In addition, cumulative impacts on visitor use and experience resulting from added noise and area closures during construction of the cumulative projects would be adverse and short term.

As described above, the implementation of the no-action alternative would result in long-term, adverse impacts on visitor use and experience related to unmet demand for nonmotorized boating facilities, although visitors would have other positive experiences in the zone and in the area. The long-term, adverse impacts of this alternative, in combination with the beneficial impacts of reasonably foreseeable future actions would result in a long-term, adverse cumulative effect. The no-action alternative would contribute a modest, adverse increment to the overall cumulative impact.

Conclusion

Under the no-action alternative, visitors would continue to come to the C&O Canal NHP, Georgetown Waterfront Park, and the Key Bridge Boathouse Concession and have positive experiences, although impacts on visitor use and experience would be long term and adverse, resulting from increasing but unmet demand for waterfront access by nonmotorized boat users and unchanging facilities and access levels. Impacts on visitor use and experience also would be long term and adverse as a result of user conflicts stemming from the continued poor configuration of the confluence of the CCT, Water Street NW and the C&O Canal towpath. The long-term, adverse impacts of this alternative, in combination with the long-term, beneficial cumulative impacts of present and reasonably foreseeable future actions, would result in long-term, adverse cumulative effects. The no-action alternative would contribute a modest, adverse increment to the overall cumulative impact.

IMPACTS OF ALTERNATIVE 2: DEVELOP THE NONMOTORIZED BOATHOUSE ZONE

Alternative 2 focuses on maximizing the potential of the zone to provide access to favorable flat water conditions for nonmotorized boating and recreation. Under alternative 2, some extent of new development would be possible on four of the sites. If the most intense options were selected, three new boathouses and a fourth boat storage facility would be added to the landscape.

The additional facilities that would be added under alternative 2 would more fully support nonmotorized boating activities in the project area. Public access to the river would be increased with four new access points, including three new public access docks that would increase public dock access by up to 625 linear feet. In addition, a new soft entry kayak launch could be added at site A. With increased access, more visitors would be able to easily access the river for nonmotorized boat uses and to stand by the water's edge, resulting in long-term, beneficial impacts on visitor use and experience.

Under alternative 2, increased capacity for a variety of nonmotorized boat uses could include three additional boathouses with amenities such as storage space, public restrooms, and informational kiosks, and three new storage facilities would increase storage for nonmotorized boats. Increased public storage would reduce some of the current demand and enable members of the public to store their boats closer to the river, allowing easier access to the river. In addition, increased facilities would provide more space for the scholastic, collegiate, and other groups to conduct their programs. Facility space would increase by up to 42,000 SF. The distribution of these new facilities along the waterfront would rearrange use patterns to alleviate crowding issues occurring at Thompson's, enabling more users to access the water during peak hours with less crowding. Increased facility space and storage space would reduce crowding, enable more people access to the river, and provide a more enjoyable experience for those visitors, resulting in long-term, beneficial impacts on visitor use and experience.

In addition to increased capacity, alternative 2 would provide new access types and visitor amenities, including a soft entry kayak launch for walk on and rental visitors, car-top launch drop off space and lockers for visitors without storage space, public restrooms, picnic and grill areas, public plaza space, and trailhead orientation and interpretive exhibits. These additions would provide convenient, accessible locations for visitor services and recreational and increased park amenities, thereby enhancing the visitor experience and increasing visitation. As a result of these improvements and increased visitation, impacts on visitor use and experience would be long term and beneficial.

This alternative also would include the addition of a cul-de-sac with a mountable curb, improved wayfinding, and use of different pavement surfaces to indicate transportation use areas through the transition point between the CCT, Water Street NW and the C&O Canal towpath. Although more visitors would use this area as a result of increased facilities and recreation opportunities, the addition of wayfinding improvements such as signage and pavement changes would improve the functionality of this trail area and could reduce visitor conflicts. This improved trail to street space would have long-term, beneficial impacts on visitor use and experience.

Alternative 2 would include extensive modification of the shoreline to remove the existing riprap and debris, creating a more natural, aesthetically pleasing shoreline profile. The shoreline improvements combined with the added facilities would result in an overall stronger visual identity and sense of destination with visible services and amenities, convenient access points, and a clear site relationship with the waterfront. As a result of the improved shoreline structure and appearance, impacts on visitor use and experience would be long term and beneficial. However, it should be noted that if the most intense development and facilities under alternative 2 were added west of the Alexandria Aqueduct, this development could diminish the experience of those seeking a more gradual transition from developed waterfront to pastoral parkland, resulting in long-term, adverse impacts on their visitor experience. In addition, some visitors may avoid the area on days when high use of facilities is expected because of increased activity and less available parking.

If the least intense development option was implemented under alternative 2 west of the Alexandria Aqueduct, this would help maintain a more natural, less developed appearance and would enhance the experience of visitors seeking the gradual transition from developed waterfront to pastoral parkland. Less development could provide more space for passive and reflective visitor activities such as picnicking, birding, nature watching, and hiking and could be perceived as positive, resulting in long-term, beneficial

impacts on visitor use and experience. Again, visitors who currently use the area may avoid it on busier days because of increased activity and less available parking.

Impacts on visitor use and experience during construction would be short term and adverse because of potential project area closures and construction noise. In the case of temporary closures to trails or pathways, detours would be provided.

If the private townhouses were to become available for inclusion in the project at some point in the future, a larger (120 x 60 foot) boathouse is proposed under the site D option with the public plaza shifted to the west where the townhouses are currently. This option would provide an additional 7,200 SF of facility space for visitor use and add 3,600 SF of boat storage space, thereby increasing the beneficial impacts on visitor use and experience by providing more space for access and activities.

Cumulative Impacts

Impacts from other actions and projects in the cumulative area of analysis would be the same as those described under the no-action alternative, resulting in long-term, beneficial impacts from enhancing existing project area resources, adding new visitor destinations, and providing increased nonmotorized boat user access points. Alternative 2 would result in long-term, beneficial impacts and some long- and short-term, adverse impacts on visitor use and experience. When combined with long-term, beneficial impacts from cumulative actions, overall cumulative impacts would be beneficial, and alternative 2 would have appreciable beneficial and modest, adverse contributions to the overall beneficial, cumulative impacts on visitor use and experience.

Conclusion

Alternative 2 would result in a long-term, beneficial impact on visitor use and experience as a result of increased public access to the river, increased visitors, increased and more diverse visitor opportunities and facilities, improved transition points, and enhanced visitor experience. However, there could be long-term, adverse impacts on visitors who want a more gradual transition from developed waterfront to parkland and perceive the added development as negatively impacting their experience. In addition, impacts on visitor use and experience during construction would be short term and adverse because of the potential closure of portions of the project area. When combined with long-term, beneficial impacts from cumulative actions, overall cumulative impacts would be beneficial, and alternative 2 would have appreciable beneficial and modest, adverse contributions to the overall beneficial, cumulative impacts on visitor use and experience

This page intentionally left blank.

CHAPTER 5: CONSULTATION AND COORDINATION

This chapter describes the public involvement and agency consultation used during the preparation of this EA.

Public Involvement

NPS initiated public scoping for the EA by issuing a scoping notice on January 21, 2015. This notice to initiate the scoping period and announce a public scoping meeting was sent to an email list of 519 recipients and posted to the project's Planning, Environment, and Public Comment (PEPC) website (<http://parkplanning.nps.gov/nmbzea>). Subsequently, a public meeting to solicit community feedback on the initial purpose and need, issues, and preliminary alternatives was held on February 4, 2015.

The meeting was an open house format with a presentation explaining the project and the processes for NEPA and section 106 of the NHPA. NPS also provided a newsletter to attendees that contained information on the project. The public was able to submit comments to the park via email, regular mail, PEPC, or on comment forms made available at the meeting.

Cooperating Agencies

Because of the location of the proposed zone and the complexity of the project, both NCPC and DDOT are official cooperating agencies. NCPC has review authority over all federal land actions in the District of Columbia. DDOT is a cooperating agency because of the relationship of the CCT to existing boathouse facilities, problems with transitions between the CCT and Water Street NW and into Georgetown Waterfront Park, and other transportation planning opportunities to improve traffic conditions along Water Street NW in the zone.

NCPC is the planning agency for the federal government in the District of Columbia and the National Capital Region. It was established by the National Capital Planning Act. NCPC reviews all proposed federal actions that affect the nation's capital and surrounding areas. The agency's principal responsibility is to protect and enhance the historic, cultural, and natural resources of the national capital by creating and updating a comprehensive plan for the region; crafting long-range plans and policies; reviewing a variety of federal and district development projects; and producing the federal Capital Improvements Program. Any planning documents related to the zone and any resulting projects, including land exchanges, development projects, and landscape design, are subject to review and approval by NCPC.

Other Agency Review

In addition to NCPC review, the site is within the Old Georgetown Historic District, and the project is subject to review by the Old Georgetown Board, which is a part of the CFA.

Congress established the CFA to provide expert advice to the president, Congress, and heads of departments and agencies of the federal and District of Columbia governments on matters of aesthetics and design as they "affect the Federal interest and preserve the dignity of the nation's capital" (CFA 2016). Under the Old Georgetown Act, the CFA Old Georgetown Board advises on design matters affecting the historic district of Georgetown. Proposed projects in the zone would be subject to Old Georgetown Board review.

Advisory Neighborhood Commissions (ANCs) are residential advisory boards for the neighborhoods in the District of Columbia. ANCs consider policies and programs affecting neighborhoods, including traffic, parking, recreation, zoning, economic development, and related issues. The zone is in Georgetown and therefore the Georgetown ANC would review any actions taken that affect the zone. Once it has reviewed a proposed action, the ANC would present its positions and make recommendations to appropriate District of Columbia government agencies, the District of Columbia executive branch, and the

city council. ANCs may also present their positions to federal agencies, such as the Old Georgetown Board and NPS.

Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on historic properties and to afford the Advisory Council on Historic Preservation, state historic preservation officers, and other consulting parties a reasonable opportunity to comment on such undertakings. Through this process, concerns associated with historic preservation are addressed at the early stages of project planning. Overall, the objective of consultation is to identify historic properties potentially affected by the undertaking; assess its effects; and seek ways to avoid, minimize, or mitigate any adverse effects on historic properties. Any action taken within the zone would require section 106 review.

Agency Consultation

Agency consultation began early in the EA process and is ongoing to ensure that all relevant agencies are informed of any NPS planning actions. Table 7 provides a list of potential permits, reviews, and consultations that would be required for project implementation.

TABLE 7. REQUIRED AGENCY CONSULTATION

Law, Statute, or Authority	Agency	Permit, Review, or Consultation	Outcome
Section 106 of the National Historic Preservation Act	District of Columbia State Historic Preservation	Section 106 of the NHPA requires federal agencies to consider the impacts of their undertakings on historic properties and archeological resources. Compliance with section 106 of the NHPA is being conducted separately from this EA.	Occurring concurrently.
National Capital Planning Act	National Capital Planning Commission (NCPC)	NCPC is the review agency for federal projects in the District of Columbia and surrounding region. NCPC has direct review authority for federal projects in the District and advisory review authority in adjacent jurisdictions.	Discussion with NCPC staff occurring concurrently with development of the EA; Commission review will occur at completion of EA process.
Old Georgetown Act	Old Georgetown Board of the Commission of Fine Arts (CFA)	The Old Georgetown Act designated the Old Georgetown Historic District and established requirements for design review of design projects by the Old Georgetown Board of the CFA.	Discussion with DDOT staff occurring concurrently with development of the EA. Review will occur when the NEPA decision document is available.
Section 7 of the Endangered Species Act	US Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS)	Section 7 of the Endangered Species Act requires federal agencies to consult with USFWS and National Oceanic and Atmospheric Administration's National Marine Fisheries Service regarding the potential for proposed actions to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.	Letter submitted to USFWS on December 22, 2014. Letter submitted to the National Marine Fisheries Service on July 26, 2016. Consultation may be reinitiated during the design phase if construction methods or other parameters change.

Law, Statute, or Authority	Agency	Permit, Review, or Consultation	Outcome
Sections 401 and 404 of the Clean Water Act	US Army Corps of Engineers (USACE) District Department of Energy & Environment	Under section 404 of the Clean Water Act, USACE regulates the tidal waters and wetlands contiguous to tidally flowed waterways within the study area. A Nationwide Permit will be required for potential impacts on USACE jurisdictional waters of the US. The District Department of Energy & Environment administers the Water Pollution Control Act of 1984 under section 401 of Clean Water Act, which is required as part of the section 404 review/issuance by the USACE.	Permitting for both to occur at design.
Section 10 of the River and Harbors Act	US Army Corps of Engineers (USACE)	Under section 10 of the River and Harbors Act, USACE regulates structures/fill in navigable waters. A section 10 permit will be required showing that any proposed bulkheads or docks would be compatible with navigation.	Permitting to occur at design.
DC Discharge Elimination System	District Department of Energy & Environment	A State Pollutant Discharge Elimination System Permit is required for construction projects disturbing more than 5,000 SF of soil. A stormwater pollution prevention plan would be prepared to minimize impacts of stormwater during construction.	Permitting to occur at design.

This page intentionally left blank.

CHAPTER 6: LIST OF PREPARERS

National Park Service

Tammy Stidham, National Capital Region

Joel Gorder, National Capital Region

Chris Stubbs, Chesapeake & Ohio Canal National Historical Park

Nick Bartolomeo, Rock Creek Park

Louis Berger

Margaret Stewart, Project Manager

Carolyn Mitchell, Alternatives Development

Diana De Gonzales, Alternatives Development

Julie Eitner, Visitor Use and Experience

Camilla Deiber, Historic Structures and Districts

Sean Gannon, Land Use

Laura Hodgson, Transportation

Mark Berger, Transportation

Megan Blue-Sky, GIS

Sean Partain, GIS and Transportation

Wendy Aviles, Transportation Modeling

Nancy Van Dyke, Quality Review

Tim Canan, Quality Review

Spence Smith, Quality Review

Coreen Johnson, Editing

Deborah Mandell, Editing

This page intentionally left blank.

CHAPTER 7: REFERENCES

Ator, S. W., J. D. Blomquist, J. W. Brakebill, J. M. Denis, M. J. Ferrari, C. V. Miller, and Z. Humbert

- 1998 *Water Quality in the Potomac River Basin, Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia, 1992-96*. US Geological Survey Circular 1166.

BestParking

- 2015 BestParking.com. Accessed December 2015. <http://washingtondc.bestparking.com/>.

Capital Bikeshare

- n.d. "Capital Bikeshare Station Map." Accessed January 26, 2016. <https://secure.capitalbikeshare.com/map/>.

Coalition for the Capital Crescent Trail

- 2006 *Trail Use Survey*.

Cooper, R.

- 2014 "Watergate Hotel renovation could begin in March." Washington Business Journal (WBJ). January 14, 2014. Accessed January 8, 2016. <http://www.bizjournals.com/washington/blog/top-shelf/2014/01/details-emerge-on-the-watergate-hotel.html>.

Cowardin, Lewis M, V. Carter, F.C. Golet, and E.T. LaRoe

- 1979 *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish and Wildlife Service Report No. FWS/OBS/-79/31. Washington, DC.

District of Columbia

- 2004 Final Total Maximum Daily Load for Fecal Coliform Bacteria in Upper Potomac River, Middle Potomac River, Lower Potomac River, Battery Kemble Creek, Foundry Branch, and Dalecarlia Tributary, July 2004.
- 2012 "Sustainability DC: Sustainable DC Plan." Accessed August 11, 2014. Available at <http://sustainable.dc.gov/finalplan>.

District of Columbia Department of the Environment (DDOE), now Department of Energy and the Environment

- 2013a *Notice of Final Rulemaking: Stormwater Management, and Soil Erosion and Sediment Control*.
- 2013b *Stormwater Management Guidebook*. Prepared by the Center for Watershed Protection for the District of Columbia.

District of Columbia Department of Health (DDOH)

- 2003 *2003 District of Columbia Standards and Specifications for Soil Erosion and Sediment Control*.

District of Columbia Historic Preservation Office (DC HPO)

- 2009 “District of Columbia Inventory of Historic Sites, Alphabetical Version.” Accessed October 2015.
<http://planning.dc.gov/DC/Planning/Historic+Preservation/Maps+and+Information/Landmarks+and+Districts/Inventory+of+Historic+Sites/Alphabetical+Edition>.

District of Columbia Office of CTO (DC OCTO)

- 2015 Flood Insurance Rate Map Data (GIS).

District of Columbia Office of Planning (DCOP)

- 2011 *Comprehensive Plan*. April 8, 2011. Accessed February 8, 2016.
<http://planning.dc.gov/page/comprehensive-plan>.

District of Columbia Water and Sewer Authority (DC Water)

- 2002 *WASA’s Recommended Combined Sewer System Long Term Control Plan, Executive Summary*. July 2002.
- 2014 “Combined Sewer Overview.” Accessed August 11, 2014.
<http://www.dewater.com/about/cip/cso.cfm>.
- 2016 “Potomac River Tunnel Project.” Accessed February 25, 2016.
https://www.dewater.com/workzones/projects/potomac_river_tunnel/default.cfm.

District Department of Transportation (DDOT)

- 2012 “DDOT Guidelines for Comprehensive Transportation Review (CTR) Requirements.” Accessed February 3, 2014.
http://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/ddot_comprehensive_transportation_review_requirements_2012.pdf.
- 2013 “Union Station to Georgetown Alternatives Analysis for Premium Transit Service. Washington, DC.” September 2013. Accessed November 03, 2015.
<http://unionstationtogetorgetown.com/index.php/related-studies/aa-study-report>.
- 2014a *moveDC: Bicycle Element. From: move DC: the District of Columbia's Multimodal Long-Range Transportation Plan*. Accessed January 8, 2016.
http://www.wemovedc.org/resources/Final/Part%20Plan_Elements/Bicycle.pdf.
- 2014b “Truck and Bus Through Routes and Restrictions.” March 6, 2014. Accessed February 10, 2016.
http://www.godcgo.com/Portals/0/Freight_PDF/TruckandBusThroughRouteandRestrictions.pdf.
- 2014c *DC Circulator 2014 Transit Development Plan Update; Draft: September 2014*. Accessed February 10, 2016.
<http://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/2014%20DC%20Circulator%20Transit%20Development%20Plan%20Update%20Report.pdf>.
- 2015a “DC Circulator Map.” Washington, DC. Accessed December 1, 2015.
<http://dccirculator.wpengine.com/wp-content/uploads/2015/08/DC-Circulator-Brochure-2015.pdf>.

- 2015b *2015 Bikeways Work Plan*. February 12, 2015. Accessed November 5, 2015. <http://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/2015%20Bikeways%20Work%20Plan.pdf>.
- 2015c *The District of Columbia's Capital Bikeshare Development Plan (Draft)*. Prepared by: Foursquare Integrated Transportation Planning. September 2015. Accessed January 7, 2016. <http://ddot.dc.gov/capitalbikeshare>.

Donaldson, Emily

- 2009 *George Washington Memorial Parkway - North Cultural Landscape Inventory*. Prepared by the National Park Service.

Enterprise CarShare

- n.d. "Washington DC Enterprise CarShare." Accessed December 28, 2015. <https://www.entreprisecarshare.com/us/en/programs/retail/dc.html>.

Federal Highway Administration (FHWA)

- n.d. "Environmental Review Toolkit: Program Overview – Section 4(f)." Accessed February 17, 2016. <https://www.environment.fhwa.dot.gov/4f/index.asp>.

Flood Insurance Rate Maps (FIRM)

- 2010 Flood Insurance Rate Panel #1100010012CGSA

Friends of Georgetown Waterfront Park (FoGWP)

- 2016 "History of the Park" and "Port of Georgetown" pages on the Friends of Georgetown Waterfront Park website. Accessed July 18, 2016. <http://georgetownwaterfrontpark.org/>.

Georgetown Business Improvement District (Georgetown BID)

- n.d. "Parking." Accessed December 28, 2016. <http://www.georgetowndc.com/visitor-map-travel/parking>.

HNTB

- 2008 *Georgetown Transportation Study: Final Report, October 2008*. Washington, DC. Prepared for: District Department of Transportation. Accessed November 3, 2015. <http://ddot.dc.gov/page/georgetown-transportation-study>.

ITE

- 2012 *Trip Generation Manual, Ninth Edition*. Washington, DC.

Kynard, B., M. Atcheson, M. Kieffer, and M. Mangold

- 2007 "Status of Shortnose Sturgeon in the Potomac Rivers: Part I—Field Studies. USGS Natural Resources Preservation Project E 2002-7." Prepared for the National Park Service. July 20, 2007.

Laris, M.

- 2015 “Bowser’s budget for D.C. streetcar project focuses on single, 7.5-mile line.” *The Washington Post*. April 2, 2015. Accessed February 18, 2016. https://www.washingtonpost.com/local/trafficandcommuting/dc-streetcars-go-forward-more-slowly/2015/04/02/e72673e0-d960-11e4-b3f2-607bd612aeac_story.html.

Louis Berger

- 2016 *Georgetown Nonmotorized Boathouse Zone Development Plan Wetland Delineation Report; Chesapeake & Ohio Canal National Historical Park Rock Creek Park (Draft)*. July 2016.

Metropolitan Washington Council of Governments (MWCOCG)

- 2014 “Potomac River Water Quality in the Washington Region.” Accessed July 19, 2016. <https://www.mwcog.org/documents/2014/06/11/potomac-water-quality-in-the-washington-region-chesapeake-bay-monitoring-potomac--sav-water-quality/>.
- 2015 *Fiscal Year 2015–2020 Transportation Improvement Plan*. Accessed January 7, 2016. <http://www.mwcog.org/clrp/projects/tip/>.

National Oceanic and Atmospheric Administration

- 2016 Nautical Chart 12285: Potomac River. Updated April 19, 2016. Accessed May 20, 2016. http://www.charts.noaa.gov/OnLineViewer/12285_01.shtml.

National Capitol Planning Commission (NCPC)

- 1999 “Washington’s Waterfronts.” <https://www.ncpc.gov/DocumentDepot/Publications/Waterfronts1999.pdf>
- 2010 “CapitalSpace.” 2010. Accessed February 11, 2016. <http://www.ncpc.gov/capitalspace/>.

National Park Service

- 1971 *Registration Form, National Register of Historic Places. C&O Canal*. Accessed January 6, 2016. <http://focus.nps.gov/nrhp/AssetDetail?assetID=f89d868a-a1d4-4549-a89a-9283c7312fde>.
- 1985 *Survey of Non-motorized Boating Activities along the Georgetown Waterfront*, 1985.
- 1987 *Plan for the Georgetown Waterfront Park and the C&O Canal NHP*.
- 1989 *Special Study: Nonmotorized Boating in the Potomac and Anacostia Rivers, Washington, DC*.
- 1990a *Registration Form, National Register of Historic Places. Washington Canoe Club*. Accessed July 20, 2012. <http://pdfhost.focus.nps.gov/docs/NRHP/Text/90002151.pdf>.
- 1990b *Registration Form, National Register of Historic Places. Potomac Boat Club*. Accessed January 6, 2016. <http://focus.nps.gov/nrhp/GetAsset?assetID=1e25b957-601d-4f29-aca8-371d7af17bfd>.
- 1995a *Environmental Assessment for the Proposed Exchange of Properties between the National Park Service and Georgetown University within the District of Columbia and within the Boundary of Potomac Palisades Park within the Chesapeake & Ohio Canal National Historical Park*.

- 1995b *Registration Form, National Register of Historic Places. Francis Scott Key Bridge.* Accessed January 6, 2016. <http://focus.nps.gov/nrhp/GetAsset?assetID=3dd25802-bc32-4b47-8b1c-67b2fc35c959>.
- 1995c *Registration Form, National Register of Historic Places. George Washington Memorial Parkway.* Prepared by Jere L. Krakow.
- 1995d *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings.* Prepared by Kay Weeks and Anne E. Grimmer.
- 1997 *Memorandum of Agreement between the National Park Service, the District of Columbia Historic Preservation Officer, and the Advisory Council on Historic Preservation.*
- 1998 Director's Order 28: *Cultural Resources Guideline.* Washington, DC.
- 1999 *Registration Form, National Register of Historic Places. Theodore Roosevelt Island.* Prepared by Kay Fanning. Accessed January 6, 2016. <http://focus.nps.gov/nrhp/GetAsset?assetID=c126b250-bac7-47b4-81c9-e222d0aeacd2>.
- 2000 *Draft Supplemental Report: Non-motorized Boating on the Potomac River in Georgetown.*
- 2002 Facility and Site Analysis for a Boathouse on the Potomac River in Arlington County, 2002.
- 2003 Director's Order 77-2: *Floodplain Management.* September 8, 2003.
- 2005a *Registration Form, National Register of Historic Places. Watergate.* Accessed January 6, 2016. <http://focus.nps.gov/nrhp/GetAsset?assetID=d3abb145-34ab-46bd-8ad5-c753f8f58e68>.
- 2005b *Registration Form, National Register of Historic Places. Rock Creek and Potomac Parkway Historic District.* Accessed January 6, 2016. <http://focus.nps.gov/nrhp/GetAsset?assetID=08df9706-5778-48fb-8722-4d67c63a0928>.
- 2006a *Georgetown University Boathouse Environmental Assessment.*
- 2006b *NPS Management Policies 2006.*
- 2008a Draft Environmental Impact Statement—Proposed Land Exchange and Georgetown University Boathouse (not published).
- 2008b Director's Order 77-1: *Wetland Protection.*
- 2008c 2008 NPS *Programmatic Agreement with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers.*
- 2011 Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making.* Washington DC.
- 2013 *Nonmotorized Boathouse Zone Feasibility Study.* Prepared by the Louis Berger Group for the National Park Service, August 2013.
- 2015a *National Park Service NEPA Handbook.* Washington, DC. September 2015.
- 2015b *Phase IA Archaeological Investigation of the Georgetown Non-Motorized Boat Zone.* Prepared for National Park Service by Louis Berger Group, National Capital Region, Washington, DC.

Natural Resources Conservation Service (NRCS)

- 2016 “Web Soil Survey, Washington DC.” Accessed February 25, 2016.
<http://websoilsurvey.nrcs.usda.gov/app/>.

Nelson Nygaard

- 2014 *Transportation Study and Transportation Demand Management Plan for 3000 M Street NW*. June 2014. Received in personal communication from Johnathan Rodgers from DDOT to Mark Berger at Louis Berger. December 16, 2015.

Parking Panda

- 2015 “Parking Panda.” December 28, 2015. Accessed December 2015.
<https://www.parkingpanda.com/?ref=georgetown>.

Patton, Harris, Rust and Associates

- 2004 *Georgetown University Boathouse Hydraulic Impact Analysis*. Project Number 12710-1-0, 18). February 18, 2004.

Potomac Conservancy

- 2016 *State of the Nation's River 2016. #Potomac Report Card*. Accessed July 16, 2016.
<http://www.potomacreportcard.org/>.

Robinson & Associates

- 2012 Determination of Eligibility, John. F. Kennedy Center for the Performing Arts. Washington, DC.

Rodgers, J.

- 2015a Personal communication from Jonathan Rodgers from DDOT to Mark Berger at Louis Berger. Re: Planned Developments. December 16, 2015.
- 2015b Personal communication from Jonathan Rodgers from DDOT to Mark Berger at Louis Berger. Re: Planned Developments. November 20, 2015.

Schnabel Engineering

- 2005 *Wetland Delineation and SAV Report. Non-motorized Boathouse Georgetown University*, Washington, DC. February 4, 2005.

Stantec

- 2013 *Traffic Impact Study – John F Kennedy Center for the Performing Arts Expansion Project (Appendix C of the Kennedy Center Expansion Project - Environmental Assessment)*. October 2013.
<http://parkplanning.nps.gov/document.cfm?parkID=427&projectID=48203&documentID=61929>.

US Army Corps of Engineers (USACE)

- 1987 *Corps of Engineers Wetlands Delineation Manual*. Wetlands Research Program Report Technical Manual Report Y-87-1.

US Commission of Fine Arts (CFA)

2016 “Commission of Fine Arts.” <https://www.cfa.gov/> on May 31, 2016.

Virginia Institute of Marine Sciences (VIMS)

2016 SAV in Chesapeake Bay and Coastal Bays, Monitoring – Interactive Map. Accessed July 18, 2016. <http://web.vims.edu/bio/sav/maps.html>.

Washington Metropolitan Area Transit Authority (WMATA)

2015 “DC System [Bus] Map.” Washington, DC. August 2015. Accessed January 8, 2016. <http://www.wmata.com/bus/maps/>.

2016 “Building a Better Bus Experience.” Accessed January 8, 2016. <http://www.wmata.com/bus/BetterBus.cfm>.

Wells + Associates

2015 *3220 Prospect Street – Comprehensive Transportation Review*. Received in personal communication from Johnathan Rodgers from DDOT to Mark Berger at Louis Berger. December 16, 2015.

Zipcar

n.d. “Car Sharing Washington, DC.” Accessed February 9, 2015. <http://www.zipcar.com/dc/find-cars>.

This page intentionally left blank.

CHAPTER 8: ACRONYMS AND ABBREVIATIONS

ANC	Advisory Neighborhood Commission
APE	Area of Potential Effect
CCT	Capital Crescent Trail
CFA	Commission of Fine Arts
C&O	Chesapeake & Ohio
CFR	Code of Federal Regulations
DC HPO	District of Columbia Historic Preservation Office
DDOT	District Department of Transportation
EA	Environmental Assessment
EISA	Energy Independence and Security Act of 2007
GIS	Geographic Information Systems
ITE	Institute of Transportation Engineers
Key Bridge	Francis Scott Key Bridge
NCPC	National Capital Park and Planning Commission
NEPA	National Environmental Policy Act
NHP	National Historical Park
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
PEPC	Planning, Environment, and Public Comment
SAV	Submerged Aquatic Vegetation
SF	square feet
Thompson's	Thompson Boat Center
TIA	Transportation Impact Assessment
USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service
WMATA	Washington Metropolitan Area Transit Authority

This page intentionally left blank.

**APPENDIX A: CONSULTATION AND COORDINATION
CORRESPONDENCE**

This page intentionally left blank.



IN REPLY
REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
National Capital Region
1100 Ohio Drive, S.W.
Washington, D.C. 20242

December 22, 2014

Mr. Reid Nelson
Director
Office of Federal Agency Programs
Advisory Council on Historic Preservation
401 F St NW Suite 308
Washington DC 20001-2367

Re: Proposed Nonmotorized Boating Facilities Rock Creek Park/Chesapeake & Ohio Canal National
Historic Park, Washington D.C.

Dear Mr. Nelson:

The National Park Service is proposing to implement the nonmotorized boathouse zone adjacent to Georgetown Waterfront Park in Washington, D.C. We are formally initiating consultation on this project with the District of Columbia Historic Preservation Office, in accordance with 36 CFR 800.3 of Section 106 of the National Historic Preservation Act.

This project grew out of the 1987 Georgetown Waterfront Master Plan, which designated a portion of the Potomac River shoreline as a suitable location for boathouses to support nonmotorized boating on the Upper Potomac River. Since that time, multiple studies have assessed the growing interest in and demand for nonmotorized boating as well as ways to meet those needs. A Feasibility Study was completed in 2013 by the National Park Service to assess site uses, size limitations, and other constraints.

The proposed project area extends from 34th Street, NW at the western edge of Georgetown Waterfront Park to approximately a quarter mile upriver from Key Bridge in the District of Columbia (see enclosed figure). The project area encompasses both public and private land to include portions of the Chesapeake and Ohio Canal National Historical Park (C&O Canal NHP) and Rock Creek Park, as well as several private parcels (the Potomac Boat Club, several private residences, and a small parcel accessible from the shoreline only).

The purpose of this project is to improve the public's connection to the Potomac River and address increasing popularity of paddle and rowing sports by increasing public access to the Potomac River for nonmotorized boating through additional development of facilities and programming along the District of Columbia side of the Potomac River in Georgetown. Nonmotorized boating facilities and their uses are needed in Georgetown because of the desirable conditions for boating that exist along the Georgetown waterfront. The current boathouse facilities that provide access to the Potomac River, as well as other amenities in this area – including boat storage, improved bike/pedestrian connections, concessions, access facilities, boat rentals, beach, and docks -- are being run at full capacity and demand is expected to increase.

The National Park Service will develop an Environmental Assessment and a separate Assessment of Effects for this project. However, at this early stage, we are unable to propose either an area of potential effect or to make any determination of effect. We are planning to consult with the public per 800.3(e) in public meetings and through our Planning, Environment, and Public Comment website (www.parkplanning.nps.gov). We anticipate that these outreach efforts will accommodate both the National Environmental Policy Act requirements and the Section 106 process.

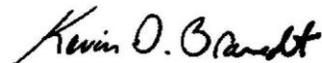
A copy of the Environmental Assessment and the Assessment of Effect will be provided to your office for review when it becomes available, and we anticipate further consultation with your office as mandated by Section 106.

If you require additional information, please contact Tammy Stidham by phone at (202) 619-7474, or by email at tammy_stidham@nps.gov.

Sincerely,



Tara Morrison
Superintendent,
Rock Creek Park



Kevin Brandt
Superintendent
Chesapeake and Ohio Canal National Historical Park

Enclosure: Proposed Project Area

cc: Katrie Harris, Advisory Council on Historic Preservation
David Maloney, State Historic Preservation Officer
Andrew Lewis, District of Columbia State Historic Preservation Office

Figure 1: Proposed Project Area





IN REPLY
REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
National Capital Region
1100 Ohio Drive, S.W.
Washington, D.C. 20242

December 22, 2014

Mr. David Maloney
State Historic Preservation Officer
District of Columbia Office of Planning
1100 Fourth Street S.W., Suite E650
Washington, D.C. 20024

Re: Proposed Nonmotorized Boating Facilities Rock Creek Park/Chesapeake & Ohio Canal National
Historic Park, Washington D.C.

Dear Mr. Maloney:

The National Park Service is proposing to implement the nonmotorized boathouse zone adjacent to Georgetown Waterfront Park in Washington, D.C. We are formally initiating consultation on this project with the District of Columbia Historic Preservation Office, in accordance with 36 CFR 800.3 of Section 106 of the National Historic Preservation Act.

This project grew out of the 1987 Georgetown Waterfront Master Plan, which designated a portion of the Potomac River shoreline as a suitable location for boathouses to support nonmotorized boating on the Upper Potomac River. Since that time, multiple studies have assessed the growing interest in and demand for nonmotorized boating as well as ways to meet those needs. A Feasibility Study was completed in 2013 by the National Park Service to assess site uses, size limitations, and other constraints.

The proposed project area extends from 34th Street, NW at the western edge of Georgetown Waterfront Park to approximately a quarter mile upriver from Key Bridge in the District of Columbia (see enclosed figure). The project area encompasses both public and private land to include portions of the Chesapeake and Ohio Canal National Historical Park (C&O Canal NHP) and Rock Creek Park, as well as several private parcels (the Potomac Boat Club, several private residences, and a small parcel accessible from the shoreline only).

The purpose of this project is to improve the public's connection to the Potomac River and address increasing popularity of paddle and rowing sports by increasing public access to the Potomac River for nonmotorized boating through additional development of facilities and programming along the District of Columbia side of the Potomac River in Georgetown. Nonmotorized boating facilities and their uses are needed in Georgetown because of the desirable conditions for boating that exist along the Georgetown waterfront. The current boathouse facilities that provide access to the Potomac River, as well as other amenities in this area – including boat storage, improved bike/pedestrian connections, concessions, access facilities, boat rentals, beach, and docks -- are being run at full capacity and demand is expected to increase.

The National Park Service will develop an Environmental Assessment and a separate Assessment of Effects for this project. However, at this early stage, we are unable to propose either an area of potential

effect or to make any determination of effect. We are planning to consult with the public per 800.3(e) in public meetings and through our Planning, Environment, and Public Comment website (www.parkplanning.nps.gov). We anticipate that these outreach efforts will accommodate both the National Environmental Policy Act requirements and the Section 106 process.

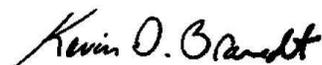
A copy of the Environmental Assessment and the Assessment of Effect will be provided to your office for review when it becomes available, and we anticipate further consultation with your office as mandated by Section 106.

If you require additional information, please contact Tammy Stidham by phone at (202) 619-7474, or by email at tammy_stidham@nps.gov.

Sincerely,



Tara Morrison
Superintendent,
Rock Creek Park



Kevin Brandt
Superintendent
Chesapeake and Ohio Canal National Historical Park

Enclosure: Proposed Project Area

cc: Katrie Harris, Advisory Council on Historic Preservation



IN REPLY
REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
National Capital Region
1100 Ohio Drive, S.W.
Washington, D.C. 20242

December 22, 2014

Mr. Keith A. Anderson
Director
D.C. Department of the Environment
1200 First Street NE, 5th Floor
Washington, DC 20002

Re: Environmental Assessment for Proposed Nonmotorized Boating Facilities, Rock Creek
Park/Chesapeake & Ohio Canal National Historic Park, Washington D.C.

Dear Mr. Anderson:

The National Park Service (NPS) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969 for the implementation of nonmotorized boating facilities in a nonmotorized boathouse zone adjacent to Georgetown Waterfront Park in Washington, D.C. This project grew out of the 1987 Georgetown Waterfront Master Plan, which designated a portion of the Potomac River shoreline as a suitable location for boathouses to support nonmotorized boating on the Upper Potomac River. Since that time, multiple studies have assessed the growing interest in and demand for nonmotorized boating as well as ways to meet those needs. A Feasibility Study was completed in 2013 by the National Park Service to assess site uses, size limitations, and other constraints.

The proposed project area extends from 34th Street, NW at the western edge of Georgetown Waterfront Park to approximately a quarter mile upriver from Key Bridge in the District of Columbia (see enclosed figure). The project area encompasses both public and private land to include portions of the Chesapeake and Ohio Canal National Historical Park (C&O Canal NHP) and Rock Creek Park, as well as several private parcels (the Potomac Boat Club, several private residences, and a small parcel accessible from the shoreline only).

The purpose of this project is to improve the public's connection to the Potomac River and address increasing popularity of paddle and rowing sports by increasing public access to the Potomac River for nonmotorized boating through additional development of facilities and programming along the District of Columbia side of the Potomac River in Georgetown. Nonmotorized boating facilities and their uses are needed in Georgetown because of the desirable conditions for boating that exist along the Georgetown waterfront. The current boathouse facilities that provide access to the Potomac River, as well as other amenities in this area – including boat storage, improved bike/pedestrian connections, concessions, access facilities, boat rentals, beach, and docks – are being run at full capacity and demand is expected to increase.

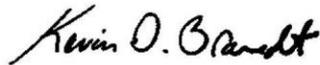
The purpose of this initial correspondence is to request a list of any state listed species or habitats that may occur on the proposed project site and to solicit any early input or concerns that you may have regarding this proposed action. A similar letter is also being sent to the U.S. Fish and Wildlife Service to solicit its input.

If you require additional information, please contact Tammy Stidham by phone at (202) 619-7474, or by email at tammy_stidham@nps.gov. Thank you in advance for your assistance.

Sincerely,



Tara Morrison
Superintendent,
Rock Creek Park



Kevin Brandt
Superintendent
Chesapeake and Ohio Canal National Historical Park

Enclosure: Proposed Project Area

cc: Hamid Karimi, Deputy Director, DC Department of the Environment



IN REPLY
REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
National Capital Region
1100 Ohio Drive, S.W.
Washington, D.C. 20242

December 22, 2014

John Bullard, Regional Administrator
Nation Oceanic and Atmospheric Administration Fisheries Service
Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, Massachusetts 01930-2276

Re: Environmental Assessment for Proposed Nonmotorized Boating Facilities, Rock Creek Park/Chesapeake & Ohio Canal National Historic Park, Washington D.C.

Dear Mr. Bullard:

The National Park Service (NPS) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969 for the implementation of nonmotorized boating facilities in a nonmotorized boathouse zone adjacent to Georgetown Waterfront Park in Washington, D.C. This project grew out of the 1987 Georgetown Waterfront Master Plan, which designated a portion of the Potomac River shoreline as a suitable location for boathouses to support nonmotorized boating on the Upper Potomac River. Since that time, multiple studies have assessed the growing interest in and demand for nonmotorized boating as well as ways to meet those needs. A Feasibility Study was completed in 2013 by NPS to assess site uses, size limitations, and other constraints.

The proposed project area extends from 34th Street, NW at the western edge of Georgetown Waterfront Park to approximately a quarter mile upriver from Key Bridge in the District of Columbia (see enclosed figure). The project area encompasses both public and private land to include portions of the Chesapeake and Ohio Canal National Historical Park (C&O Canal NHP) and Rock Creek Park, as well as several private parcels (the Potomac Boat Club, several private residences, and a small parcel accessible from the shoreline only).

The purpose of this project is to improve the public's connection to the Potomac River and address increasing popularity of paddle and rowing sports by increasing public access to the Potomac River for nonmotorized boating through additional development of facilities and programming along the District of Columbia side of the Potomac River in Georgetown. Nonmotorized boating facilities and their uses are needed in Georgetown because of the desirable conditions for boating that exist along the Georgetown waterfront. The current boathouse facilities that provide access to the Potomac River, as well as other amenities in this area – including boat storage, improved bike/pedestrian connections, concessions, access facilities, boat rentals, beach, and docks – are being run at full capacity and demand is expected to increase.

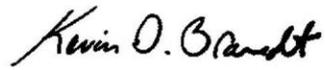
In compliance with the Endangered Species Act of 1973, as amended, we are consulting with the National Marine Fisheries Service (NOAA Fisheries) regarding the existence of federally listed species within the project area along the Potomac River.

Your input will help ensure that the environmental impacts of the proposal are properly considered in the planning process. If you have any questions or require any further information please contact Tammy Stidham by phone at (202) 619-7474, or by email at tammy_stidham@nps.gov. Thank you in advance for your assistance.

Sincerely,



Tara Morrison
Superintendent,
Rock Creek Park



Kevin Brandt
Superintendent
Chesapeake and Ohio Canal National Historical Park

Enclosure: Proposed Project Area

District of Columbia Office of Planning



February 4, 2015

Tammy Stidham
Chief, Planning, Compliance & GIS
National Capital Region
National Park Service
1100 Ohio Drive SW
Washington, DC 20242

Re: Georgetown Nonmotorized Boathouse Zone Development Plan

Dear Tammy:

Thank you for your letter of January 21 regarding the re-opening, in accordance with NEPA and the NHPA, of study and consultation for the proposed nonmotorized boating facilities in the western section of Georgetown's Waterfront Park. We have few comments at the moment, as we wish the public and the Park Service to weigh in on the appropriate balance between boat storage/launching, other uses, and historic and environmental values.

Based on past experience, we think that the abandonment of a boathouse upriver of the Washington Canoe Club is a positive step toward consensus, as well as more consistent with the previously understood western boundary of Waterfront Park. We support the removal of the three "noncontributing" townhouses adjacent to the Potomac Boat Club in order to expand recreational uses. We would encourage the employment of permeable paving, as well as the limitation of paving where it may be expanded, as for the apron on Site C in Alternative 1.

We have a couple of questions at this point. One is about the nature of the facilities labeled as storage. Are these intended to be open canoe and kayak racks similar to those at Belle Haven Marina?

We are also interested to know what the Park Service envisions for the third dimension of each boathouse, its height. There may well be efficiency in some uses of upstairs space. The previously proposed Georgetown University boathouse may have contained spaces that were not necessarily ancillary to the crew use, and these added to its bulk, which was controversial in some quarters. Different degrees of bulk may have differing effects on historic resources, such as the adjacent historic boathouses. Bulk can be ameliorated to a degree through massing and scale-giving detail, but we would encourage that the ultimate construction be closely related to the ostensible sport purpose of the undertaking, with a reasonable amount of programmatic growth potential built in.

Sincerely,

Tim Dennee
Architectural Historian

1100 4th Street SW, Suite E650, Washington, DC 20024 voice 202.442.7600 fax 202.442.7638





United States Department of the Interior

NATIONAL PARK SERVICE
National Capital Region
1100 Ohio Drive, S.W.
Washington, D.C. 20242

November 2, 2015

Julie Langan
State Historic Preservation Officer
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

Re: Proposed Nonmotorized Boating Facilities Rock Creek Park/Chesapeake & Ohio Canal National Historic Park, Washington, D.C.

Dear Ms. Langan:

The National Park Service (NPS) is preparing an Environmental Assessment in accordance with the National Environmental Policy Act (NEPA) of 1969 for the implementation of nonmotorized boating facilities and related park improvements in the western section of the Georgetown Waterfront Park in Washington, D.C. The 1987 Georgetown Waterfront Park Master Plan established a zone for boathouse facilities that has not yet been implemented. The need for such facilities was confirmed in the 2013 Feasibility Study for a Nonmotorized Boathouse Zone.

The proposed project area extends from 34th Street, NW at the western edge of Georgetown Waterfront Park to approximately a quarter mile upriver from Key Bridge in the District of Columbia (see enclosed figure). The project area encompasses both public and private land including portions of the Chesapeake and Ohio Canal National Historical Park (C&O Canal NHP) and Rock Creek Park, and several private parcels (the Potomac Boat Club, several private residences, and a small parcel accessible from the shoreline only).

The purpose of this project is to establish a Potomac River recreation zone that more fully supports non-motorized recreation, increases the public's access to the river, improves functionality of the Capital Crescent Trail (CCT) as it connects to the Georgetown Waterfront Park, and respects the historic character, natural resources, and existing recreational use of the Chesapeake and Ohio Canal National Historical Park and Rock Creek Park. Nonmotorized boating facilities are needed in Georgetown due to limited public access points for nonmotorized boating and paddle sports along the Georgetown waterfront. Increased popularity for nonmotorized water sports (canoeing, kayaking, rowing, paddle boarding, etc.), and insufficient capacity at current boathouse facilities that provide access to the river and related amenities (boat storage, concessions, access facilities, boat rentals, beach, and docks. The current configuration of the CCT and its connection to Georgetown does not provide safe and compatible access for pedestrians and bicyclists with motorized vehicles to and through the "zone."

The National Park Service will develop an Environmental Assessment and a separate Assessment of Effects for this project. The National Park Service is planning to consult with the public per 800.3E in public meetings and through our Planning, Environment, and Public Comment website (www.parkplanning.nps.gov). We anticipate that these outreach efforts will accommodate both the National Environmental Policy Act requirements and the Section 106 process. A copy of the Environmental Assessment and the Assessment of Effects will be provided to your office for review when they become available, and we anticipate further consultation with your office as mandated by Section 106. We are formally initiating consultation on this project with the Virginia Department of Historic Resources, in accordance with 36 CFR 800.3 of Section 106 of the National Historic Preservation Act.

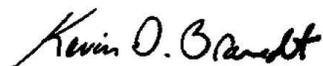
The NPS has drafted a preliminary area of potential effects (APE) (see enclosed figure). The primary APE encompasses the proposed project area, extending from 34th Street, NW at the western edge of Georgetown Waterfront Park to approximately a quarter mile upriver from Key Bridge in the District of Columbia. The secondary APE takes into account potential visual impacts to surrounding historic resources adjacent to the undertaking. Resources within the secondary APE in Virginia include the George Washington Memorial Parkway (DHR No. 029-0228), Francis Scott Key Bridge (DHR No. 000-5823), and Theodore Roosevelt Memorial Bridge (DHR No. 000-5822)

We appreciate your review of this information and any comments you may have on the APE and the resources we have identified during our preliminary research. If you require additional information, please contact Tammy Stidham by phone at (202) 619-7474, or by email at tammy_stidham@nps.gov.

Sincerely,



Tara Morrison
Superintendent
Rock Creek Park

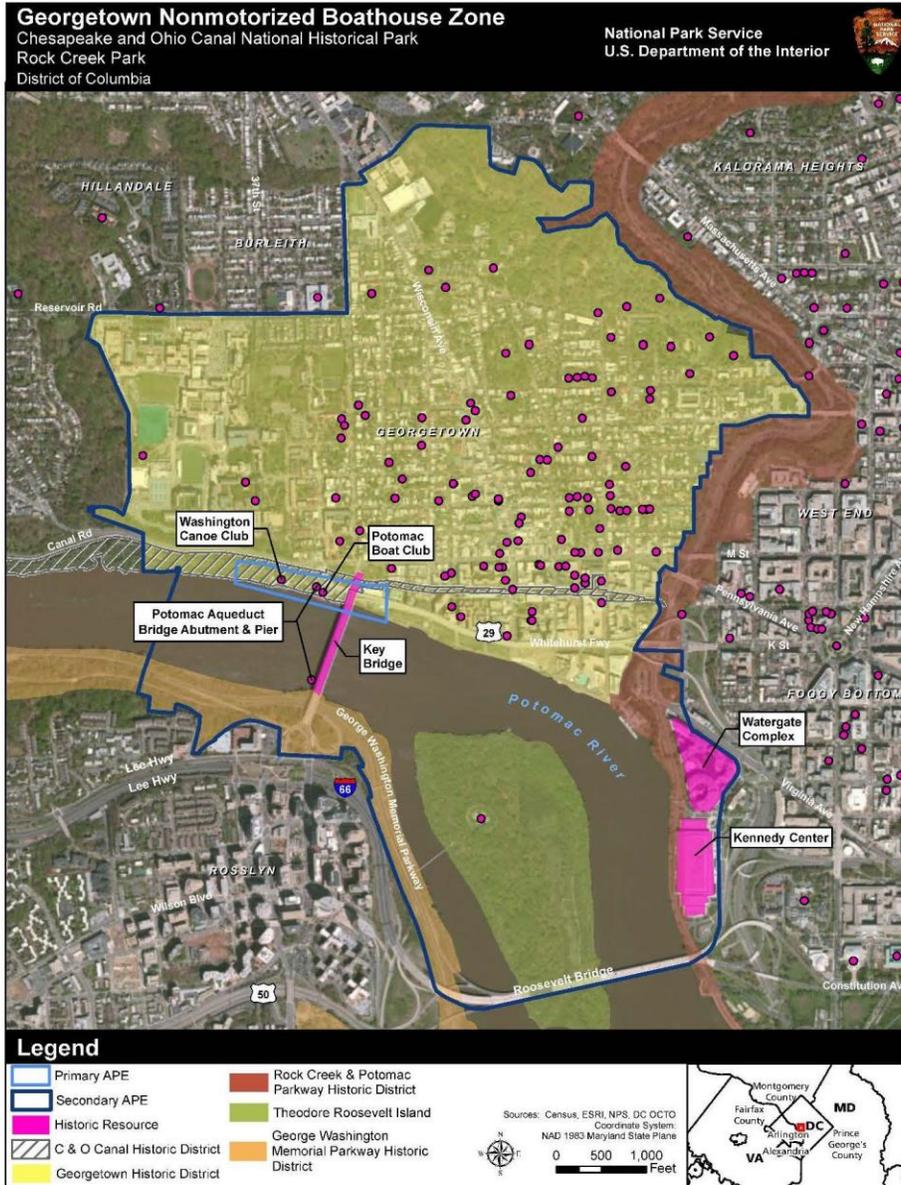


Kevin Brandt
Superintendent
Chesapeake and Ohio Canal National Historic Park

Cc: Andrea Burke, Virginia DHR

Enclosure: Preliminary Area of Potential Effects Map

Enclosure: Preliminary Area of Potential Effects for the Georgetown Nonmotorized Boathouse Zone





United States Department of the Interior

NATIONAL PARK SERVICE
National Capital Region
1100 Ohio Drive, S.W.
Washington, D.C. 20242

March 9, 2015

Mr. Marcel Acosta, Executive Director
National Capital Planning Commission
401 9th Street NW
North Lobby, Suite 500
Washington, DC 20004

Re: Environmental Assessment for Proposed Nonmotorized Boating Facilities, Rock Creek Park/Chesapeake & Ohio Canal National Historic Park, Washington D.C.

Dear Mr. Acosta:

The National Park Service (NPS) is preparing an Environmental Assessment in accordance with the National Environmental Policy Act (NEPA) of 1969 for the implementation of nonmotorized boating facilities and related park improvements in the western section of the Georgetown Waterfront Park in Washington, D.C. The 1987 Georgetown Waterfront Park Master Plan established a zone for boathouse facilities that has not yet been implemented. The need for such facilities was confirmed in the 2013 Feasibility Study for a Nonmotorized Boathouse Zone.

The proposed project area extends from 34th Street, NW at the western edge of Georgetown Waterfront Park to approximately a quarter mile upriver from Key Bridge in the District of Columbia (see enclosed figure). The project area encompasses both public and private land including portions of the Chesapeake and Ohio Canal National Historical Park (C&O Canal NHP) and Rock Creek Park, and several private parcels (the Potomac Boat Club, several private residences, and a small parcel accessible from the shoreline only).

The purpose of this project is to establish a Potomac River recreation zone that more fully supports non-motorized recreation, increases the public's access to the river, improves functionality of the Capital Crescent Trail (CCT) as it connects to the Georgetown Waterfront Park, and respects the historic character, natural resources, and existing recreational use of the Chesapeake and Ohio Canal National Historical Park and Rock Creek Park. Nonmotorized boating facilities are needed in Georgetown due to limited public access points for nonmotorized boating and paddle sports along the Georgetown waterfront. Increased popularity for nonmotorized water sports (canoeing, kayaking, rowing, paddle boarding, etc.), and insufficient capacity at current boathouse facilities that provide access to the river and related amenities (boat storage, concessions, access facilities, boat rentals, beach, and docks. The current configuration of the CCT and its connection to Georgetown does not provide safe and compatible access for pedestrians and bicyclists with motorized vehicles to and through the "zone."

NPS values public input and is currently taking public comment on preliminary alternatives for this proposal. Information on the proposed preliminary alternatives can be found at www.parkplanning.nps.gov/nmbzeanewsletter. During this scoping period, the public is invited to identify any issues or concerns they might have with the proposed project, so the NPS can appropriately consider them in the preparation of the Environmental Assessment. A public scoping meeting was held on Wednesday, February 4, 2015 at the Palisades Public Library at 4901 V Street, NW, Washington, D.C. 20007 from 6:00pm to 8:00pm. The public scoping comment period began on January 21, 2015 and continues through March 6, 2015.

The purpose of this correspondence is to invite your feedback on the project. You may provide comment via the project website at www.parkplanning.nps.gov/nmbzea, via e-mail to Tammy Stidham at Tammy_Stidham@nps.gov, or by mail at the address below:

National Park Service
National Capital Region
Tammy Stidham
ATTN: Georgetown Nonmotorized Boathouse Zone Development Plan
1100 Ohio Drive, SW
Washington, DC 20242

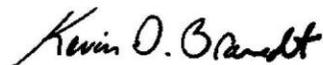
NPS would like to invite you to attend an agency scoping meeting on Thursday, March 26, 2015 from 10:00am – 11:00am at National Capital Region, National Park Service, 1100 Ohio Drive SW, Washington, DC, 20242. If you have any questions or require additional information, please contact Tammy Stidham by phone at (202)619-7474 or by email at Tammy_Stidham@nps.gov.

Thank you in advance for your assistance.

Sincerely,



Tara Morrison
Superintendent,
Rock Creek Park



Kevin Brandt
Superintendent
Chesapeake and Ohio Canal National Historical Park

Enclosure: Proposed Project Area



IN REPLY REFER TO:
NCPC File No. 7660

January 29, 2016

Ms. Tammy Stidham
Chief of Planning, Compliance
and Geographic Information System (GIS)
National Capital Region
National Park Service
1100 Ohio Drive, SW
Washington, DC 20242

Re: Environmental Assessment for Proposed Non-motorized Boating Facilities and Related Park Improvements in the western section of Georgetown Waterfront Park in Washington, DC

Dear Ms. Stidham:

Thank you for the opportunity to become a cooperating agency in the preparation of an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) for the implementation of non-motorized boating facilities and related park improvements in the western section of Georgetown Waterfront Park in Washington, DC. The proposed project area extends from 34th Street NW at the western edge of Georgetown Waterfront Park to approximately a quarter-mile upriver from Key Bridge. The staff of the National Capital Planning Commission (NCPC) supports the purpose of the action, which the National Park Service (NPS) states is to establish a Potomac River recreation zone that more fully supports non-motorized recreation; increases the public's access to the river; improves functionality of the Capital Crescent Trail as it connects to the Georgetown Waterfront Park; and respects the historic character, natural resources, and existing recreational use of the Chesapeake and Ohio Canal National Historical Park and Rock Creek Park.

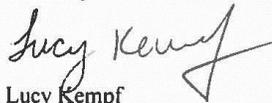
On March 26, 2015, NCPC staff participated in an agency scoping meeting for the Georgetown Non-motorized Boathouse Zone Development Plan. Later, NCPC staff prepared a letter dated April 10, 2015 providing comments on the preliminary alternatives under consideration and also requesting to be a cooperating agency on the EA.

We look forward to continued involvement in the NEPA and Section 106 processes, and the design of this project. The proposed project is required to be submitted to NCPC for formal review in accordance with the National Capital Planning Act. We confirm NCPC agreement to be a cooperating agency on the EA to satisfy our independent responsibility under the National Environmental Policy Act. In addition, we recommend that the NPS schedule an early consultation meeting to discuss the project submission.

Ms. Tammy Stidham
Page 2

Please see our website at www.ncpc.gov for the Comprehensive Plan for the National Capital and for our submission guidelines and deadlines. If you have any questions regarding our submission requirements, please contact Vivian Lee at (202) 482-7238 or vivian.lee@ncpc.gov.

Sincerely,



Lucy Kempf
Director, Urban Design and Plan Review

cc: Kevin Brandt, Superintendent, Chesapeake and Ohio Canal Historical Park
Tara Morrison, Superintendent, Rock Creek Park



United States Department of the Interior

NATIONAL PARK SERVICE
National Capital Region
1100 Ohio Drive, S.W.
Washington, D.C. 20242

March 9, 2015

Mr. Matthew Brown, Director
District Department of Transportation
55 M Street SE
Suite 400
Washington, DC 20003

Re: Environmental Assessment for Proposed Nonmotorized Boating Facilities, Rock Creek Park/Chesapeake & Ohio Canal National Historic Park, Washington D.C.

Dear Mr. Brown:

The National Park Service (NPS) is preparing an Environmental Assessment in accordance with the National Environmental Policy Act (NEPA) of 1969 for the implementation of nonmotorized boating facilities and related park improvements in the western section of the Georgetown Waterfront Park in Washington, D.C. The 1987 Georgetown Waterfront Park Master Plan established a zone for boathouse facilities that has not yet been implemented. The need for such facilities was confirmed in the 2013 Feasibility Study for a Nonmotorized Boathouse Zone.

The proposed project area extends from 34th Street, NW at the western edge of Georgetown Waterfront Park to approximately a quarter mile upriver from Key Bridge in the District of Columbia (see enclosed figure). The project area encompasses both public and private land including portions of the Chesapeake and Ohio Canal National Historical Park (C&O Canal NHP) and Rock Creek Park, and several private parcels (the Potomac Boat Club, several private residences, and a small parcel accessible from the shoreline only).

The purpose of this project is to establish a Potomac River recreation zone that more fully supports non-motorized recreation, increases the public's access to the river, improves functionality of the Capital Crescent Trail (CCT) as it connects to the Georgetown Waterfront Park, and respects the historic character, natural resources, and existing recreational use of the Chesapeake and Ohio Canal National Historical Park and Rock Creek Park. Nonmotorized boating facilities are needed in Georgetown due to limited public access points for nonmotorized boating and paddle sports along the Georgetown waterfront. Increased popularity for nonmotorized water sports (canoeing, kayaking, rowing, paddle boarding, etc.), and insufficient capacity at current boathouse facilities that provide access to the river and related amenities (boat storage, concessions, access facilities, boat rentals, beach, and docks. The current configuration of the CCT and its connection to Georgetown does not provide safe and compatible access for pedestrians and bicyclists with motorized vehicles to and through the "zone."

NPS values public input and is currently taking public comment on preliminary alternatives for this proposal. Information on the proposed preliminary alternatives can be found at www.parkplanning.nps.gov/nmbzeanewsletter. During this scoping period, the public is invited to identify any issues or concerns they might have with the proposed project, so the NPS can appropriately consider them in the preparation of the Environmental Assessment. A public scoping meeting was held on Wednesday, February 4, 2015 at the Palisades Public Library at 4901 V Street, NW, Washington, D.C. 20007 from 6:00pm to 8:00pm. The public scoping comment period began on January 21, 2015 and continues through March 6, 2015.

The purpose of this correspondence is to invite your feedback on the project. You may provide comment via the project website at www.parkplanning.nps.gov/nmbzea, via e-mail to Tammy Stidham at Tammy_Stidham@nps.gov, or by mail at the address below:

National Park Service
National Capital Region
Tammy Stidham
ATTN: Georgetown Nonmotorized Boathouse Zone Development Plan
1100 Ohio Drive, SW
Washington, DC 20242

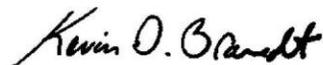
NPS would like to invite you to attend an agency scoping meeting on Thursday, March 26, 2015 from 10:00am – 11:00am at National Capital Region, National Park Service, 1100 Ohio Drive SW, Washington, DC, 20242. If you have any questions or require additional information, please contact Tammy Stidham by phone at (202)619-7474 or by email at Tammy_Stidham@nps.gov.

Thank you in advance for your assistance.

Sincerely,



Tara Morrison
Superintendent,
Rock Creek Park



Kevin Brandt
Superintendent
Chesapeake and Ohio Canal National Historical Park

Enclosure: Proposed Project Area

Government of the District of Columbia
Department of Transportation



2015 JUL -6 PM 1:49

d. Office of the Director

May 28, 2015

Ms. Tara Morrison
Superintendent
Rock Creek Park National Park Service
National Capital Region
1100 Ohio Drive, SW
Washington, D.C. 20242

Mr. Kevin Brandt
Superintendent
Chesapeake/Ohio Canal National Historic Park
Rock Creek Park National Park Service
National Capital Region
1100 Ohio Drive, SW
Washington, D.C. 20242

Dear Ms. Morrison and Mr. Brandt:

Thank you for your letter regarding the National Park Service's (NPS) project, *Environmental Assessment for Proposed Non-motorized Boating Facilities at Rock Creek Park and Chesapeake & Ohio Canal National Historic Park*. The District Department of Transportation (DDOT) remains committed to working with NPS to improve multi-modal travel in the project area.

DDOT's representative on the project, Mr. Jim Sebastian, Bicycle Coordinator, attended the March 26, 2015 NPS meeting on this project. As he noted at the meeting, DDOT's main concern is the connection of the Capital Crescent Trail to the DDOT-funded trail through the Georgetown Waterfront Park, some of which will travel through DDOT public space. DDOT is committed to working with you to maximize the safety and convenience of the various Environmental Assessment alternatives for cyclists, pedestrians and motorists. Mr. Sebastian, along with other DDOT staff, will work with Ms. Tammy Stidham at NPS to arrange a field visit to discuss the configuration of the trail, roadway, sidewalks and other public space uses.

Thank you, again, for your letter. If you have any additional questions or concerns, then please do not hesitate to contact Mr. Sebastian at 202-671-2331 or via email at jim.sebastian@dc.gov.

Sincerely,

Leif Dorsmjo
Director

District Department of Transportation | 55 M Street, SE, Suite 400, Washington, DC 20003 | 202.671.2800 | ddot.dc.gov





IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
National Capital Region
1100 Ohio Drive, S.W.
Washington, D.C. 20242

January 8, 2016

Lief Dormsjo
Director
District Department of Transportation
55 M Street, SE
Suite 400
Washington, DC 20003

Dear Mr. Dormsjo:

The National Park Service (NPS) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act of 1969 for the implementation of non-motorized boating facilities and related park improvements in the western section of Georgetown Waterfront Park in Washington, DC. The project will include an assessment of historic resources in accordance with Section 106 of the National Historic Preservation Act.

The proposed project area extends from 34th Street NW at the western edge of Georgetown Waterfront Park to approximately a quarter-mile upriver from Key Bridge. The purpose of the proposed action is to establish a Potomac River recreation zone that more fully supports non-motorized recreation; increases the public's access to the river; improves functionality of the Capital Crescent Trail as it connects to the Georgetown Waterfront Park; and respects the historic character, natural resources, and existing recreational use of the Chesapeake and Ohio Canal National Historical Park and Rock Creek Park. The project area encompasses both public and private land including portions of the Chesapeake and Ohio Canal National Historical Park and Rock Creek Park, and several private parcels (the Potomac Boat Club, several private residences, and a small parcel accessible from the shoreline only).

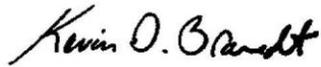
NPS invites your agency to become a cooperating agency in the development of the EA for the referenced project. Please respond to this invitation with an acceptance or denial within 30 days from the date of receipt. Information on the project can be found at www.parkplanning.nps.gov/nmbzea.

If you have any questions please contact Tammy Stidham, Chief of Planning, Compliance and GIS, at (202) 619-7474 or by email at tammy_stidham@nps.gov. Thank you for your cooperation with this project.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tara Morrison".

Tara Morrison
Superintendent,
Rock Creek Park

A handwritten signature in black ink, appearing to read "Kevin D. Brandt".

Kevin Brandt
Superintendent,
Chesapeake and Ohio Canal National Historical Park

CC: James R. Sebastian, Transportation Planner
Austina Casey, Environmental Policy Analyst

Government of the District of Columbia
Department of Transportation



Ms. Tara D. Morrison
Superintendent
Rock Creek Park
National Park Service
3545 Williamsburg Lane NW
Washington, D.C. 20008-1207

Mr. Kevin Brandt
Superintendent
Chesapeake and Ohio Canal National Historical Park
National Park Service
1850 Dual Highway, Suite 100
Hagerstown, MD 21740

Dear Ms. Morrison and Mr. Brandt:

Thank you for your letter regarding the National Park Service's (NPS) Environmental Assessment (EA) for the implementation of non-motorized boating facilities and related park improvements in the western section of Georgetown Waterfront Park in Washington, DC. The District Department of Transportation (DDOT) understands that the proposed project will encompass public land within DDOT's right-of-way, extending from 34th Street NW at the western edge of Georgetown Waterfront Park to approximately a quarter-mile upriver from Key Bridge.

DDOT accepts your invitation to become a cooperating agency in the development of the EA for this project. I concur that DDOT's role is as a cooperating agency pursuant to the Council on Environmental Quality regulations provided in 40 CFR §1501.6.

Thank you, again, for your letter. DDOT looks forward to participating in further consultation as the EA is developed. My representative in this effort will be Mr. Stephen Plano, Environmental Manager, who can be contacted at (202) 671-2227 or stephen.plano@dc.gov. You should feel free to contact him on my behalf.

Sincerely,

A handwritten signature in black ink, appearing to read "Leif A. Dormsjo".

Leif A. Dormsjo
Director

CC: Ms. Tammy Stidham, Chief of Planning, Compliance, and GIS

Georgetown NMBZ EA

IPaC Trust Resource Report

Generated February 16, 2016 12:58 PM MST; IPaC v2.3.2

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



IPaC - Information for Planning and Conservation (<https://eas.fws.gov/ipac/>). A project planning tool to help streamline the U.S. Fish & Wildlife Service environmental review process.

US Fish & Wildlife Service

IPaC Trust Resource Report



NAME

Georgetown NMBZ EA

LOCATION

District of Columbia County, District of Columbia

DESCRIPTION

Updated 2.16.2016

IPAC LINK

<https://ecos.fws.gov/ipac/project/63FEW-CJMSJ-FZ7FF-YYDP7-KK8IF>



U.S. Fish & Wildlife Contact Information

Trust resources in this location are managed by:

Chesapeake Bay Ecological Services Field Office

177 Admiral Cochrane Drive

Annapolis, MD 21401-7307

(410) 573-4599

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the [Endangered Species Program](#) of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require FWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

[Section 7](#) of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from the Regulatory Documents section in IPaC.

There are no endangered species in this location

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the [Bald and Golden Eagle Protection Act](#).

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

Additional information can be found using the following links:

- Birds of Conservation Concern
<http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/akn-histogram-tools.php>

The following species of migratory birds could potentially be affected by activities in this location:

American Oystercatcher <i>Haematopus palliatus</i> Year-round https://ecos.fws.gov/less_public/profile/speciesProfile.action?spcode=B0G6	Bird of conservation concern
American Bittern <i>Botaurus lentiginosus</i> Season: Wintering https://ecos.fws.gov/less_public/profile/speciesProfile.action?spcode=B0F3	Bird of conservation concern
Bald Eagle <i>Haliaeetus leucocephalus</i> Year-round https://ecos.fws.gov/less_public/profile/speciesProfile.action?spcode=B0C6	Bird of conservation concern
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> Season: Breeding https://ecos.fws.gov/less_public/profile/speciesProfile.action?spcode=B0H4	Bird of conservation concern
Blue-winged Warbler <i>Vermivora pinus</i> Season: Breeding	Bird of conservation concern
Cerulean Warbler <i>Dendroica cerulea</i> Season: Breeding https://ecos.fws.gov/less_public/profile/speciesProfile.action?spcode=B0S1	Bird of conservation concern
Fox Sparrow <i>Passerella iliaca</i> Season: Wintering	Bird of conservation concern

Kentucky Warbler <i>Geothlypis trichas</i> Season: Breeding	Bird of conservation concern
Least Bittern <i>Ixobrychus exilis</i> Season: Breeding	Bird of conservation concern
Peregrine Falcon <i>Falco peregrinus</i> Season: Wintering https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=P0FU	Bird of conservation concern
Pied-billed Grebe <i>Podilymbus podiceps</i> Season: Breeding	Bird of conservation concern
Prairie Warbler <i>Dendroica discolor</i> Season: Breeding	Bird of conservation concern
Prothonotary Warbler <i>Protonotaria citrea</i> Season: Breeding	Bird of conservation concern
Purple Sandpiper <i>Calidris maritima</i> Season: Wintering	Bird of conservation concern
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> Year-round	Bird of conservation concern
Rusty Blackbird <i>Euphagus carolinus</i> Season: Wintering	Bird of conservation concern
Short-eared Owl <i>Asio flammeus</i> Season: Wintering https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=P0HD	Bird of conservation concern
Snowy Egret <i>Egretta thula</i> Season: Breeding	Bird of conservation concern
Willow Flycatcher <i>Empidonax traillii</i> Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=P0F6	Bird of conservation concern
Wood Thrush <i>Hylocichla mustelina</i> Season: Breeding	Bird of conservation concern
Worm Eating Warbler <i>Helmitheros vermivorum</i> Season: Breeding	Bird of conservation concern

Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuges in this location

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

2015 JAN 30 PM 1:59



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930-2278

JAN - 9 2015

Handwritten notes:
✓ *Joel*
Chris
KB
2/6/15

Tara Morrison
Superintendent
Rock Creek Park

Kevin Brandt
Superintendent
Chesapeake and Ohio Canal National Historic Park
National Park Service
National Capital Region
1100 Ohio Drive, S.W.
Washington, DC 20242

Re: Environmental Assessment for Proposed Nonmotorized Boating Facilities, Rock Creek Park/Chesapeake & Ohio Canal National Historic Park, Washington D.C.

Dear Ms. Morrison and Mr. Brandt:

We received your joint letter on December 30, 2014, regarding an Environmental Assessment for proposed nonmotorized boating facilities in Rock Creek Park, and Chesapeake & Ohio Canal National Historic Park, in Washington D.C. In your letter, you requested information on the presence of Endangered Species Act (ESA) threatened and endangered species and critical habitat listed under the jurisdiction of NOAA's National Marine Fisheries Service (NMFS).

The following ESA listed species under NMFS occur within the Potomac River:

<u>Species</u>	<u>Status</u>
Gulf of Maine Distinct Population Segment (DPS) of Atlantic Sturgeon (<i>Acipenser oxyrinchus oxyrinchus</i>)	Threatened
New York Bight DPS of Atlantic sturgeon	Endangered
Chesapeake Bay DPS of Atlantic sturgeon	Endangered
Carolina DPS of Atlantic sturgeon	Endangered
South Atlantic DPS of Atlantic sturgeon	Endangered
Shortnose Sturgeon (<i>Acipenser brevirostrum</i>)	Endangered



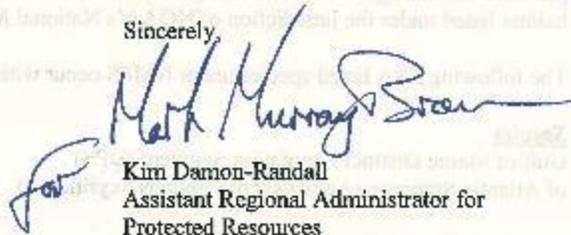
As listed species are likely to be present in the vicinity of the proposed project, a consultation pursuant to section 7 of the ESA may be necessary. As project details develop, we recommend you consider the following effects of the project on sturgeon:

- Effects of increased suspended sediment;
- Suspension of contaminated sediment;
- Discharge of any other pollutant;
- Loss of prey;
- Any impacts to habitat or conditions that make affected water bodies suitable for these species and,
- Effects of underwater sound pressure waves.

The National Park Service (NPS) will be responsible for determining whether the proposed action may affect listed species. If you determine that the proposed action may affect a listed species, you should submit your determination of effects, along with justification and a request for concurrence to the attention of the Section 7 Coordinator, NMFS, Greater Atlantic Regional Fisheries Office, Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930. After reviewing this information, we would then be able to conduct a consultation under section 7 of the ESA. If you have any questions regarding these comments, please contact Ainsley Smith (978-281-9291; Ainsley.Smith@noaa.gov).

NMFS' Habitat Conservation Division (HCD) is responsible for overseeing issues related to Essential Fish Habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act and other NOAA trust resources under the Fish and Wildlife Coordination Act. If you have any questions regarding EFH, please contact Kristy Beard (410-573-4542; Kristy.Beard@noaa.gov).

Sincerely,


Kim Damon-Randall
Assistant Regional Administrator for
Protected Resources

EC: Smith, PRD, Beard, HCD

File Code: \Non-Fisheries\NPS\Tech Assist\NPS Letter 1-8-15





IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
National Capital Region
1100 Ohio Drive, S.W.
Washington, D.C. 20242

July 26, 2016

Ainsley Smith, Section 7 Coordinator
Greater Atlantic Regional Fisheries Office
NOAA Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930-2276

Subject: Endangered Species Act Informal Section 7 Consultation for Development of the Nonmotorized Boathouse Zone, Rock Creek Park and Chesapeake and Ohio Canal National Historical Park, Washington, D.C.

Dear Ms. Smith:

The National Park Service is completing the environmental compliance process for the proposed project as described below. This letter is to request Endangered Species Act (ESA) concurrence from your office for the development of the nonmotorized boathouse zone project, at Rock Creek Park and Chesapeake and Ohio Canal National Historical Park, Washington, D.C. We have made the determination that the proposed activity may affect, but is not likely to adversely affect, any species listed as threatened or endangered by NMFS under the ESA of 1973, as amended. Our supporting analysis is provided below.

Proposed Project

The National Park Service is proposing to construct new nonmotorized boating facilities on the Potomac River in Washington, D.C. on land administered by Rock Creek Park and the Chesapeake and Ohio Canal National Historical Park. The facilities include several boathouses or storage structures adjacent to the shore. Because of floodplain considerations, the new boathouse facilities would be constructed on piles over the land. To support this project, up to 530 feet of bulkhead would be constructed across two of the adjacent sites, and removable docks parallel to the shoreline would also be placed in the river adjacent to the new facilities at three locations in the zone. At this time, the facilities have not been designed, so the National Park Service is assuming the most intense development to ensure that impacts have been captured.

The bulkhead would be constructed of vinyl or steel sheet piling, installed with a vibratory driver. Construction would be conducted from the shore, unless it is necessary to place the bulkhead further into the river than anticipated, in which case, a crane barge and material scows would be used. A debris boom would be placed around the work area to contain any material that might possibly fall into the water.

Fill may be placed behind the bulkheads, because the US Army Corps of Engineers bulkhead line extends into the water, and some reconfiguration of the shoreline may be needed, although the extent would be determined at design. Sediment curtains or other practices would be used to minimize any sedimentation in the water column in the river. No pilings would be driven to secure or support the floating docks, but instead the docks would be fixed in place using

lightweight galvanized poles, “dead man collars” with weighted chains, or other pole-less approaches. If poles are used, they would be installed manually with pole augurs.

Because the project is early in the planning stages, the construction timeframe for the bulkhead and docks is not known, but no work would be done in the river between 15 February and 1 July to protect migrating fish. As indicated in your letter to the National Park Service dated January 9, 2015, there are two species of sturgeon that may be present in the Potomac River, including the federally endangered shortnose sturgeon (*Acipenser brevirostrum*) and the endangered Chesapeake Bay, New York Bight, Carolina, and South Atlantic distinct population subgroups, and threatened Gulf of Maine distinct population subgroups of the Atlantic sturgeon (*Acipenser oxyrinchus*) (NMFS technical assistance letter to National Park Service, dated January 9, 2015). According to a US Geological Survey study, spawning grounds for the shortnose sturgeon, and probably any spawning Atlantic sturgeon, is approximately 2 miles further upstream from this site (Kynard et al. 2007) at Little Falls.

Description of the Action Area

The action area, at 38 degrees 54'07.56" N by 77 degrees 04'17.00" W, is on the Potomac River in the Georgetown section of Washington, D.C. (figure 1). The river in this area is approximately 1,100 feet (340 meters) wide, and has a bottom that is a combination of unconsolidated mud and rock. The river banks in the project area are a combination of bulkhead and otherwise constructed improvements, including a combined sewer overflow outfall and debris from previous structure foundations.

Potential Noise Impacts

Assuming no major subsurface obstructions are encountered, the sheet piling would be driven to a predetermined depth with a vibratory driver. Sheet pile installation would likely take two to three weeks, assuming that sheet piles can be installed in 12 to 15 minutes for each 2 foot section (ICF Jones & Stokes and Illingworth and Rodkin, Inc. 2009).

Vibratory installation of sheet piling is commonly used to install bulkheads, and is a relatively quiet method of installation. For reference, sound levels from the vibratory installation of sheet pilings in a case study in California are provided in Table 1. However, sound levels for the National Park Service’s proposal would likely vary from these slightly depending on the geometry and boundaries of the surrounding underwater and benthic environment (i.e., shallow/deep water, shoaled portions of channels, and obstacles in the waterway) of the Potomac River. As the distance from the source increases, underwater sound levels produced by driving the sheet piles dissipate rapidly, approximately 5dB every 10 meters for steel piles (ICF Jones & Stokes and Illingworth and Rodkin, Inc. 2009). Most vibratory sheet pile driving is not attenuated. (ICF Jones & Stokes and Illingworth and Rodkin, Inc. 2009)

There are currently no available estimates for calculating underwater noise levels for the installation of sheet piles with vibratory drivers, but vibratory driving is estimated to be 10 to 20 dB quieter than pile driving with an impact hammer (ICF Jones & Stokes and Illingworth and Rodkin, Inc. 2009). Therefore, for the purpose of this consultation, we assume any underwater noise levels produced by vibratory sheet pile driving is similar to the Berth 23, Port of Oakland case study in ICF Jones & Stokes and Illingworth and Rodkin, Inc. 2009, and that noise would dissipate in a relatively short distance.

Table 1. Transmission Loss Assumptions and NMFS Disturbance and Injury Thresholds

	Hammer type	In water sound level (RMS) at 10 meters (dB re: 1microPa)	Sound exposure level (SEL) at 10 meters (dB re: 1microPa²·sec)	Peak sound level at 10 meters (dB re: 1microPa)	Distance to 150 dB RMS fish disturbance threshold	Distance to 150 sSEL fish injury threshold (surrogate for 187 dB cSEL)
24-inch steel sheet pile	Vibratory driver	163	162	177	36 m	34 m

*Based on case study, Berth 23, Port of Oakland, in ICF Jones & Stokes and Illingworth and Rodkin Inc. 2009.

It is anticipated that, because the sheet piling would be installed using a vibratory driver, the peak sound levels would be below the 206 dB peak sound level for underwater noise thresholds used by National Marine Fisheries Service (NMFS) that may result in injury to fish.

Should fish enter into the 150 dB area of influence (i.e. within 36 m of vibratory driving activities) it is likely that they would move away from the noise source. This possible modification of normal movement patterns of some individuals is expected to be insignificant because underwater noise would be limited in duration, affect only a small area within the harbor, and would not pose a barrier to migration or the availability of other more suitable habitat. Thus interference with feeding, reproduction, migration or other activities necessary for survival is not expected. Given the small distance sturgeon would need to move to avoid the disturbing levels of noise, any effects will not be able to be meaningfully measured or detected. Therefore, effects are insignificant.

It should be noted that should the construction methods change, knowledge of substrate change, or the amount of bulkhead needed increase during the design stage, consultation would be reinitiated and further analysis would be conducted at that time.

Potential Water Quality Effects

The installation of the sheet piling and placement of any necessary fill behind the sheet piling may cause temporary increases in suspended sediments. However, little increase in sedimentation or turbidity is expected to result from these construction activities due to the use of turbidity curtains. Studies of the effects of turbid water on fish suggest that total suspended sediment (TSS) concentrations can reach thousands of milligrams per liter before an acute toxic reaction is expected (Burton 1993 as cited in NMFS 2015). For the proposed action, any suspended sediments are expected to be minimal and localized in the vicinity of the bulkhead. Sediment or turbidity curtains will be used to ensure that sediment is contained, and any sediment plumes produced are expected to settle out of the water column within a few hours and any increase in turbidity will be short term. Turbidity levels associated with pile installation are expected to be only slightly elevated above background levels (average range of 10.0 – 120.0 mg/L) (USACE 2007, Anchor Environmental 2003).

Submerged aquatic vegetation is not present in the proposed pier area, although the muddy bottom may provide some sturgeon prey, such as mollusks and amphipods. The proposed bulkhead and removable dock area is not a known foraging area, though it could be used opportunistically by some sturgeon. As TSS levels will not reach levels that are toxic to sturgeon or benthic communities, the proposed action is extremely unlikely to result in reductions in the quality or quantity of sturgeon prey currently available. Therefore, effects of

suspended sediment resulting from sheet pile installation on sturgeon will be insignificant and likely discountable.

Potential Habitat Modification

The proposed installation of approximately 9,000 square feet (600 linear feet by 15 feet wide) of new docks would shade shallow water habitat. This shading may impair foraging for species that are dependent on sight and light to capture prey; however, the area of shading is insignificant compared to available shallow water habitat available on the river. The shading effects on the availability of prey resources will be too small to be meaningfully measured or detected, and are therefore, insignificant. It is also unlikely that mussels would colonize on the dock poles in any noticeable way, and would not increase food sources for the sturgeon.

Risk from Vessel Strikes

When the project is complete, there would likely be more nonmotorized vessels (e.g., rowing shells, kayaks, canoes, and stand-up paddleboards) on the water than are currently there now. Given they are nonmotorized and shallow hulled, they would not likely impact sturgeon. There would also be some additional low-wake pontoon coaching boats that, although motorized, would not likely cause vessel strikes, for they would be slow moving and sturgeon tend to be found in the deeper channels in the Potomac River. The potential use of a barge during construction would cause a small, localized, temporary increase in vessel traffic. Given the extremely small increase in motorized vessel traffic above existing levels in this reach of the Potomac River, there would be no measurable or detectable increase in the risk of a vessel strike, and effects to sturgeon would be insignificant.

Conclusion

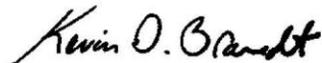
Based on this analysis, and the conclusion that the impacts to sturgeon and their habitat would be relatively small and insignificant, it is the determination of the National Park Service that the project *may affect, but is not likely to adversely affect* any listed sturgeon under NMFS jurisdiction. We are requesting your concurrence with this determination.

If you should have any questions or require additional information, please do not hesitate to contact Tammy Stidham at 202- 619-7474 or tammy_stidham@nps.gov.

Sincerely,



Tara Morrison
Superintendent
Rock Creek Park



Kevin Brandt
Superintendent
Chesapeake and Ohio National Historical Park

Enclosure: references and project location map

References

Anchor Environmental.

2003. Literature review of effects of resuspended sediments due to dredging. June. I 40pp.

Biological Assessment.

2007 Prepared by Normandeau Associates. Submitted to NMFS Northeast Regional Office on February 7, 2007. 46 p.

ICF Jones & Stokes and Illingworth and Rodkin, Inc.

2009 Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish. Prepared for California Department of Transportation.

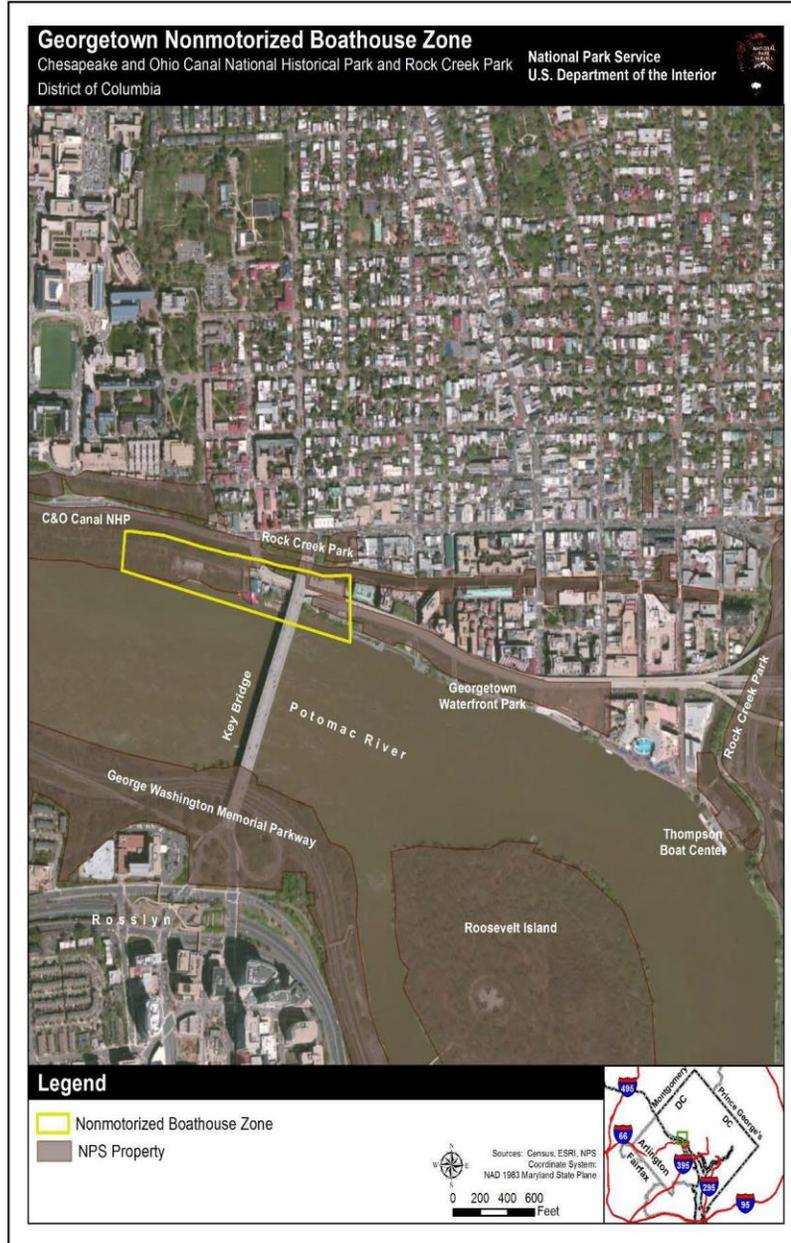
Kynard, B, M Breece, M Atcheson, M Kieffer, M. Mangold

2007 Final Report: Status of Shortnose Sturgeon in the Potomac River; Part I—Field Studies.

National Marine Fisheries Service (NMFS)

2015 National Marine Fisheries Service Section 7 consultation letter to New York District, Corps of Engineers, RE: NAN-2015-00406-WOM Shenorock Shore Club

PROJECT LOCATION MAP



APPENDIX B: TRANSPORTATION IMPACT ASSESSMENT

The Transportation Impact Assessment appendix can be downloaded from the project page at
<http://parkplanning.nps.gov/nmbzea>

This page intentionally left blank.

APPENDIX C: FLOODPLAIN STATEMENT OF FINDINGS

This page intentionally left blank.

**APPENDIX C: STATEMENT OF FINDINGS
FOR
EXECUTIVE ORDER 11988 “FLOODPLAIN MANAGEMENT”
AND
EXECUTIVE ORDER 13690 “ESTABLISHING A FEDERAL FLOOD RISK
MANAGEMENT STANDARD AND A PROCESS FOR FURTHER
SOLICITING AND CONSIDERING STAKEHOLDER INPUT”**

NONMOTORIZED BOATHOUSE ZONE

Chesapeake and Ohio Canal National Historical Park and Rock Creek Park

Washington, DC

July 2016

RECOMMENDED:

Tara Morrison Date
Superintendent, Rock Creek Park

RECOMMENDED:

Kevin Brandt Date
Superintendent, Chesapeake and Ohio Canal National Historical Park

CERTIFICATION OF TECHNICAL ADEQUACY AND SERVICEWIDE CONSISTENCY:

Chief, Water Resources Division Date

APPROVED:

Robert Vogel Date
Regional Director, National Capital Region

Introduction

Executive Order 11988 “Floodplain Management” and the newly issued Executive Order 13690 “Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input” require the National Park Service (NPS), as well as other Federal agencies, to evaluate the potential impacts of their actions to floodplains. The evaluation is intended to minimize the risk of flood damage to the park resources including capital investments, preserve and restore natural and beneficial floodplain values, and protect human safety, health and welfare. This Floodplain Statement of Findings (FSOF) has been prepared according to National Park Service Procedural Manual 77-2 to comply with Executive Order 11988 and Executive Order 13690.

The NPS is proposing to establish a nonmotorized boathouse zone (the zone) located along the District of Columbia side of the Potomac River in Georgetown. The purpose of this project is to establish a Potomac River recreation zone that more fully supports nonmotorized recreation, increases the public’s access to the river, improves functionality of the Capital Crescent Trail (CCT) as it connects to the Georgetown Waterfront Park, and respects the historic character, natural resources, and existing recreational use of the C&O Canal NHP and Rock Creek Park.

The area proposed for the zone lies within NPS administered land in the Chesapeake & Ohio (C&O) Canal National Historical Park, and in Georgetown Waterfront Park, which is part of Rock Creek Park. Previous studies have demonstrated a steadily increasing demand for nonmotorized boating, including rowing, paddling, and standup paddle boarding within the region. The proposed action would establish a program for the zone that would help meet this demand and be designed appropriate to the constraints of the site.

Project Description

The NPS is proposing to establish a Potomac River recreation zone that more fully supports nonmotorized recreation, increases the public’s access to the river, improves functionality of the Capital Crescent Trail (CCT) as it connects to the Georgetown Waterfront Park, and respects the historic character, natural resources, and existing recreational use of the C&O Canal NHP and Rock Creek Park.

Nonmotorized boating facilities are needed in Georgetown because public access points for nonmotorized boating and paddle sports are limited along the Georgetown waterfront, while the popularity of nonmotorized water sports (e.g., canoeing, kayaking, rowing, and paddle boarding) has been increasing; capacity at current boathouse facilities that provide access to the river and related amenities (boat storage, concessions, access facilities, boat rentals, beach, and docks) are insufficient; and the current configuration of the CCT and its connection to Georgetown does not provide safe and compatible access for pedestrians and cyclists as they move to and through the zone.

For discussion purposes, the zone has been divided into five Sites with Sites A–C west of the Alexandria Aqueduct in the C&O Canal NHP, and Sites D and E east of the Alexandria Aqueduct and the Potomac Boat Club, which sit on land administered by Rock Creek Park (See Figure 1, Page 5). The project focuses on the appropriate buildable area and flood resiliency design for each zone and how that area could be used to provide access to favorable flat water conditions for nonmotorized boating and improve on-shore amenities. It allows phased development of nonmotorized boating facilities for both rowing programs as well as recreational paddlers, while providing planning flexibility in future size, placement, and design of these facilities.

Georgetown Non-Motorized Boathouse Zone

Rock Creek Park and Chesapeake & Ohio Canal National Historical Park
Washington, DC

National Park Service
U.S. Department of the Interior



Legend

- Nonmotorized Boathouse Zone
- Privately owned Property

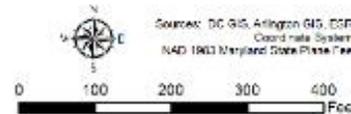


FIGURE 1. THE NONMOTORIZED BOATHOUSE ZONE

Overall, the implementation of this alternative would be phased, most likely starting with Sites D and E. Below is a summary of the proposed actions in Sites A-E, with more details provided in Figures 1 and 2.

Site A - Site A would include shoreline improvements, a sloped shoreline launch for canoes/kayaks/paddleboards, a picnic area that could include tables and grills or other amenities, and a trail/boardwalk through the Site. Based on future need, site development may include the option of constructing a small, single-story boat storage area with a footprint of no greater than approximately 2,700 square feet.

Site B - The Washington Canoe Club and its facilities are located within Site B. The only actions proposed on this Site would include general Site restoration, rehabilitation of the structure, reconfiguring or removing the fenced yard, altering the authorized access driveway so that it may service the facility, and providing controlled public access across the Washington Canoe Club apron to Site A.

Site C - Site C would provide a canoe/kayak rental/storage facility that could be one single structure or multiple smaller structures. The total facility footprint would be no greater than approximately 6,000 square feet with no more than two stories, and with a maximum height of 35 feet. The size of the adjoining public apron and dock would be commensurate with the ultimate size of the new facility or facilities, but not larger than 300 feet in length.

Site D - The primary configuration of the boathouse facility at Site D assumes that the privately owned townhouses would remain in private ownership and would include the construction of a smaller boathouse with an approximate footprint between 3,600 square feet and 4,200 square feet, a dock up to 150 feet long, a plaza, and ground-level boat storage. Both the dock and plaza areas would have public access except during permitted events, such as regattas and team practices. The proposed boathouse on this Site could be designed to have up to three stories or a maximum height of 45 feet. Should the townhouses become available for inclusion in the project at some point in the future, options for a larger boathouse (7,200 square feet) on that Site, with the public plaza shifted to the west, could be considered.

Site E - Site E would include construction of a large boathouse with a footprint of up to approximately 13,800 square feet, with a dock up to 300 feet in length, ground-level storage, and plaza areas. Both the dock and plaza areas would have public access except during permitted events, such as regattas and team practices. Treatments and configurations for Water Street, NW and links between the CCT, the street, and Georgetown Waterfront Park would include drop-off and temporary storage areas for car-top users to leave their boats while they park on Water Street, NW or in a parking garage. There would also be an apron with vehicular access from Water Street, NW at 34th Street, NW and public plaza/apron with dock access at west end of boathouse.

Reconfiguration of Roadways and Trail - The configuration of public spaces in relationship to the proposed new facilities and the street in Site D would maintain and improve access to the townhouses, Potomac Boat Club, and Washington Canoe Club. The end of Water Street, NW could feature a cul-de-sac constructed with a mountable curb, improved signage and other wayfinding, and use of different pavement surfaces through the transition between the Alexandria Aqueduct and the cul-de-sac. Wayfinding improvements for motorists, cyclists, and pedestrians could include a variety of signage at the cul-de-sac and on the CCT and changes in pavement texture and/or color where transitions occur or potential user conflicts could arise. Details would be determined at design.

Building Design Criteria - In compliance with Executive Order 11988, Floodplain Management (May 24, 1977), any new construction of structures or facilities approved to be located within the 100-year floodplain would require accepted flood-proofing and other flood protection measures to the facilities designed to be applied and would conform to the National Flood Insurance Program. E.O. 13690 amends

E.O. 11988 and establishes a Federal Flood Risk Management Standard (FFRMS) for all federally funded projects, to improve the Nation's resilience to current and future flood risks. E.O. 13690 and the FFRMS reinforce and expand upon the tenets and concepts of E.O. 11988 by calling on agencies to use a higher vertical flood elevation and corresponding floodplain than the base flood for federally funded projects. This higher elevation is a resiliency standard and was determined for this proposal by the Freeboard Value Approach (see page 9).

In addition, District of Columbia Municipal Regulation 21 stipulates that habitable spaces in buildings that are located in a floodplain must be located at least 1.5 feet above the minimum elevation of the 100-year floodplain. For this project, the proposed lower level boat storage would not be considered habitable.

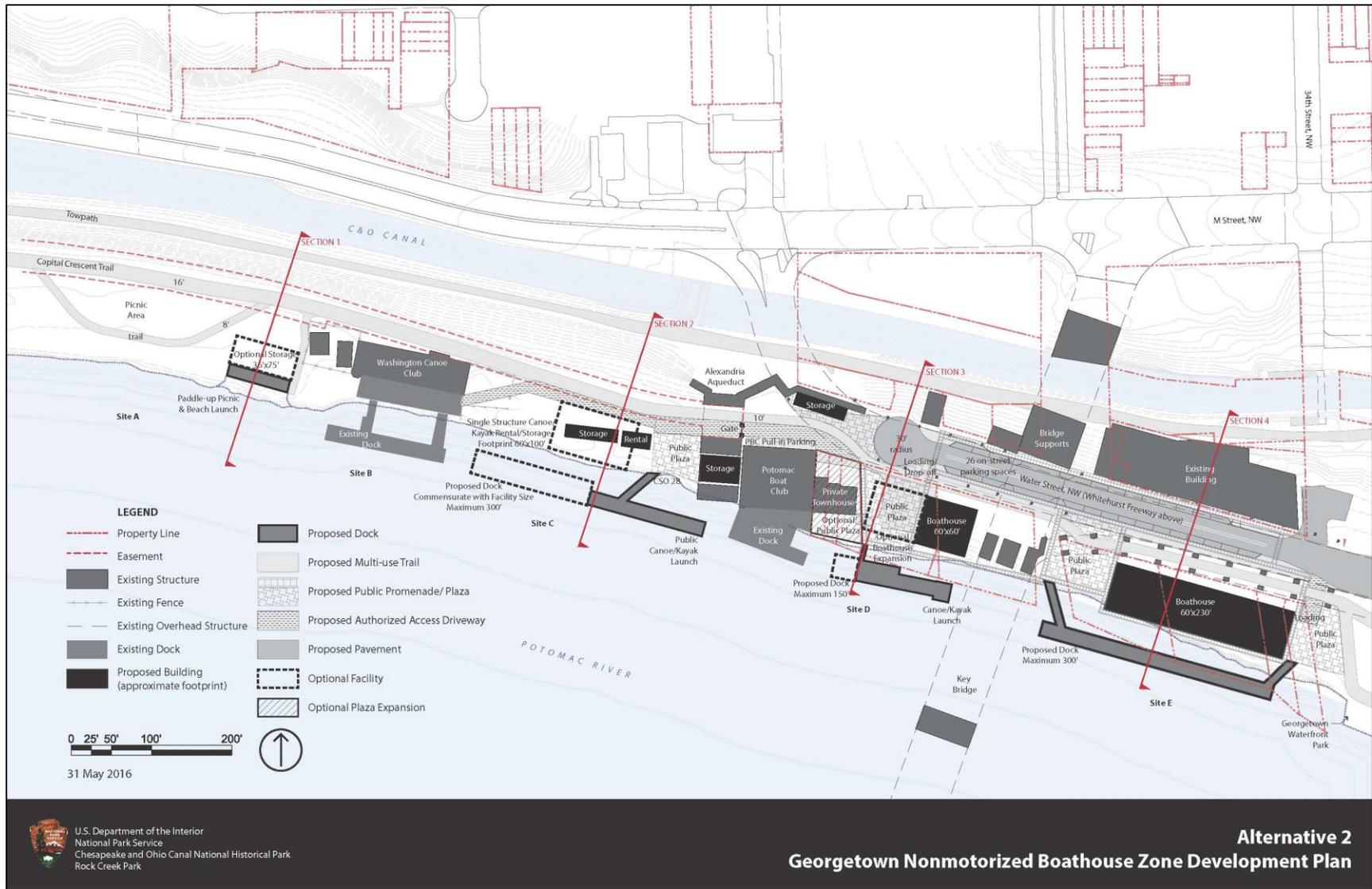


FIGURE 2. PROPOSED NONMOTORIZED BOATHOUSE ZONE

Site Description

The entire boathouse zone extends 80 to 100 feet landward from the shoreline and includes approximately 1,500 feet of river frontage; it has a total approximate area of 2.9 acres. The CCT follows a 40-foot easement on the northern boundary of the zone that narrows to 30 feet near the Washington Canoe Club. Both Key Bridge and Whitehurst Freeway are elevated facilities that cross over the zone, with the Whitehurst Freeway being elevated over Water Street (Figure 1). The project area also includes Water Street between 34th Street NW and the Alexandria Aqueduct. General Floodplain Characteristics

FLOODPLAIN DESCRIPTION

Floodplains are defined by the NPS Floodplain Management Guideline as “the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, and including, at a minimum, that area subject to temporary inundation by a regulatory flood.” The entire project area is within a 100-year floodplain, in which there is a 1% chance of flooding in a given year. The project area is in the Federal Emergency Management Agency’s Flood Hazard Zone AE with a 100-year flood elevation of +19.00 feet (DC OCTO 2015). The floodplain extends north toward the canal and stops at the canal levee, covering Water Street NW and the CCT (figure 3). The shoreline elevation varies from +8.00 feet at the western end to +15.00 feet on the eastern end of the zone (DC OCTO 2015; FIRM 2010). The highest tide of the year (the spring tide) is approximately +8.00 feet and lower areas at the western end of the zone are prone to periodic inundation.

Georgetown Nonmotorized Boathouse Zone

Rock Creek Park and Chesapeake & Ohio Canal National Historical Park
Washington, DC

National Park Service
U.S. Department of the Interior



FIGURE 3. THE FLOODPLAIN IN THE PROJECT AREA

Floodplain values include the ability of the floodplain to absorb increased water flows, recharge groundwater, and provide floodplain habitat. Floodplain values in the project area are limited, with both sites D and E either developed or fully paved. Site C has limited floodplain value, with some turfgrass and trees, with a driveway to the Washington Canoe Club and access to the combined sewer overflow outfall at the site. Site A would have the greatest intrinsic floodplain value, but is limited. Currently, obstructions in the floodplain occur, generally in the form of structures, such as Washington Canoe Club, the Alexandria Aqueduct, Potomac Boat Club, and the three townhouses. West of the Alexandria Aqueduct the land between the shore and the CCT includes mostly trees and low vegetation with no structures, so some capacity is available to accommodate flood waters, and some floodplain function exists in the form of habitat and recharge.

The Potomac River has experienced many severe floods, and this area has been subject to the effects of flooding in the past. Flooding was a major factor in why the canal was closed. The most recent severe flood occurred in 1996; minor floods occurred in 2003 and 2008.

Justification of Use of Floodplain

While the site sits entirely within the 100-year floodplain of the Potomac River, providing increased access to the water and increasing user amenities through the development of a Nonmotorized boathouse zone is dependent upon its proximity to the Potomac River and appropriate use of the floodplain.

Alternatives

The environmental assessment prepared this project only considered two alternatives, the proposed Nonmotorized Boathouse Zone (as described above) and the no action alternative.

ALTERNATIVE 1 – NO ACTION

Under the no-action alternative, no new facilities would be constructed in the nonmotorized boathouse zone, and capacity for nonmotorized boating on the Potomac River in Georgetown would remain the same with most rowers (i.e., university and high school students, individual rowers, and rowing groups) using Thompson's. Other rowers would continue to use the private Potomac Boat Club. Washington Canoe Club would remain in operation, serving paddlers who are members of the club, and negotiations concerning the use and renovation of the building in which the Washington Canoe Club is housed would continue. The concession currently known as Key Bridge Boathouse would continue in its current configuration, providing public rentals of kayaks, canoes, and paddleboards. The site east of Key Bridge and the space immediately under the bridge would remain unimproved and would continue to serve as a storage yard for the city (figure 2).

The CCT would still terminate at the Alexandria Aqueduct, and potentially dangerous conflicts because of the abrupt trail termination and lack of wayfinding for cyclists, motorists, and pedestrians would persist. Additionally, motorists unfamiliar with the area who use electronic mapping directions would continue to contribute confusion to the area because these directions assume that drivers are on the elevated road above. Although the C&O Canal NHP has installed a gate at the Alexandria Aqueduct, motorists still try to push through the gates, and wayfinding along Water Street NW is inadequate to provide direction to the wayward motorists.

Site Specific Flood Risk

The Preferred Alternative includes development that would be located in the 100-year floodplain (the floodplain that has a one 1 percent chance of being equaled or exceeded in any given year).

The entire project site is located within the 100-year floodplain. There would be up to approximately 30,300 SF of new structures within the zone under the proposal. Boathouse facilities are water-dependent, and therefore appropriate for placement in the floodplain. With the exception of the storage facility on site A, the larger facilities would be built on slab and would not contain any habitable areas. These structures

would all be constructed on piles and elevated to 2 to 3 feet above the base flood elevation (E.O. 13690). If the smaller facilities were placed on site C, these facilities would be placed on slab. Boat storage would be available on the ground floor below the habitable areas of the structures. These structures would be designed so the ground floor areas have flow-through construction and tear-away walls, so that the flood waters could flow through the structures and not impede floodplain function. Because of the conceptual nature of the plan for the zone at this time, a more specific study will be completed at the time of design for each boathouse. However, a 2004 study examined the effect of a large boathouse structure proposed at the time at the western end of the zone on the C&O Canal and the floodplain. The study concluded that the proposed structure would have no impact on the floodplain and would not increase the water surface level, velocity, or shear stress appreciably during floods (Patton, Harris, Rust and Associates 2004).

Mitigation

The preferred alternative is not expected to significantly alter the natural and beneficial functions of the floodplain.

Compliance with Development Requirements

Communities that participate in the National Flood Insurance Program, such as Washington, DC, are required to enforce floodplain management regulations that meet the requirements of the National Flood Insurance Program. Furthermore, in order to comply with Executive Order 11988 & 13690, Federal Agencies must demonstrate there are no reasonable alternatives outside of the floodplain and study ways to reduce the flood risk associated with the proposed action. Therefore, guidelines for regulated development in the 100- year floodplain so that there are minimal impacts to the floodplain, and adherence to general building and development requirements as outlined in the National Flood Insurance Program requirements will be followed.

Development in the floodway is also an issue to consider for compliance purposes. Development is generally not permitted in the floodway, and fill is prohibited in the floodway. The floodplain consists of two types of flood areas: the floodway and the flood fringe. The floodway is the area that encompasses the stream channel and is where floodwaters generally flow the fastest. By definition it is the area where fill cannot be placed without resulting in a cumulative one foot rise in the 100-year floodwater elevation. The flood fringe comprises the remainder of the floodplain that extends beyond the floodway area. According to the detailed hydraulic study for Washington, DC, the Potomac River does not have a designated floodway (FEMA, 1985), however, given the location of the proposed development, it is safe to assume it is located in the flood fringe, well away from the floodway. Therefore, the preferred alternative meets compliance requirements for floodway development. The proposed actions under the preferred alternative will be able to comply with these requirements.

Conclusions

The proposed action would include activities located within the regulatory 100-year floodplain of the Potomac River. Additionally, as a federally funded project, the additional FFRMS applies to the proposed project. The proposed development within the proposed Nonmotorized boat zone would create additional obstructions within the floodplain; however, the obstructions would not noticeably impact the water surface level during a flood event. A slight decrease in the capacity of the floodplain to store floodwaters would occur, as well as a slight decrease in infiltration. However, due to the limited capacity of the floodplain in its current condition, these alterations would not result in a measureable adverse impact. Based on the relative magnitude of the Potomac River, the proposed actions would not have appreciable effects which would increase the risk of flooding or hazards to human life or property.

Floodplain values would be only slightly affected on Site A with the possible placement of an up to 2,700 SF storage facility on the site; or not affected at all with the placement of only a trail or boardwalk were constructed. It is conceivable that the floodable designs of the future boathouse structures and the use of permeable pavers on the public plazas on sites C, D, and E could minimize impacts and slightly increase

the ability of the site to capture increased flows, although development in the zone would not improve wildlife habitat. Placement of smaller structures on site C would also affect floodplain function and values less than if a larger facility were placed there, and the structures would be designed to allow floodwaters to flow through them or to be removable if a flood is imminent, minimizing adverse effects on floodplain functions and values at that site. In addition, the proposed pedestrian/bicycle connection would have no noticeable effect on natural or beneficial floodplain functions. There would be no increase risk to human safety as a result of this proposal. The proposed boathouse structures would not be permanently inhabited, and the area would be evacuated should it be known that flooding is to occur. The project would not increase the risk associated with flooding for the 100-year event. Therefore, the National Park Service has determined the proposed actions would be consistent with Executive Order 11988 and 13690.

This page intentionally left blank.

APPENDIX D: ASSESSMENT OF EFFECTS

This page intentionally left blank.

Georgetown Nonmotorized Boathouse Zone Development Plan and Environmental Assessment

Rock Creek Park

Chesapeake & Ohio Canal National Historical Park

Final Assessment of Effects

***Under Section 106, National Historic Preservation Act of
1966 (54 U.S.C. 306108)***

June 2016

This page intentionally left blank.

TABLE OF CONTENTS

INTRODUCTION	5
Project Background.....	5
Project Location	5
Purpose.....	7
SUMMARY OF ALTERNATIVES.....	7
Alternative 1: No Action Alternative.....	7
Alternative 2: Nonmotorized Boathouse Zone	7
IDENTIFICATION OF CULTURAL RESOURCES	15
Areas of Potential Effect	15
Historic Context	15
Identification of Historic Districts, Structures, and Sites Within the Area of Potential Effect.....	19
Historic Districts	19
Historic Buildings, Structures, and Sites	22
Identification of Cultural Landscapes in the Area of Potential Effect	23
Identification of Archeological Resources in the Area of Potential Effect.....	23
ASSESSMENT OF EFFECTS	24
Methodology	24
Effects on Historic Districts and Structures within the Area of potential effects	24
Effects of the Alternative 1: No Action Alternative	24
Effects of Alternative 2	24
CONCLUSION.....	29
REFERENCES	29

LIST OF FIGURES

Figure 1. Project Site.....	6
Figure 2. Alternative 2.....	10
Figure 3. Cross Section at Site A.....	11
Figure 4. Cross Section at Site C.....	12
Figure 5. Cross Section at Site D.....	13
Figure 6. Cross Section at Site.....	14
Figure 7. Area of Potential Effect.....	17
Figure 8. Rural Character West of the Alexandria Aqueduct.....	20
Figure 9. Urban Character East of the Alexandria Aqueduct.....	20
Figure 10. Ice Dams along the Potomac River, Washington Canoe Club at Left, Proposed Site C in Center of Photo.....	26
Figure 11. 1922 Photo Showing Shoreline within the NMBZ Site C, at Left of Aqueduct, Site D at Right of Aqueduct and Potomac Boat Club (adjacent to the aqueduct).....	26
Figure 12. Capital Crescent Trail and Dense Vegetation to the North.....	27

LIST OF TABLES

Table 1. Summary of Action Alternatives.....	4
--	---

INTRODUCTION

Project Background

The National Park Service (NPS) proposes to implement a nonmotorized boathouse zone (NMBZ) located along the District of Columbia side of the Potomac River in the Georgetown neighborhood (figure 1). This NMBZ would extend from 34th Street, NW, at the western edge of Georgetown Waterfront Park to approximately a quarter of a mile upriver from Key Bridge in the District of Columbia. The NMBZ would encompass both public and private lands, including portions of the Chesapeake and Ohio Canal National Historical Park (C&O Canal NHP) and Georgetown Waterfront Park, part of Rock Creek Park, and several private parcels (the Potomac Boat Club, three private residences, and a small parcel accessible from the shoreline only). There is a strong interest in nonmotorized boating in Washington, DC. Previous studies have demonstrated a steadily increasing demand for nonmotorized boating, including rowing, paddling, and standup paddle boarding. The purpose of this project is to establish a Potomac River recreation zone that more fully supports nonmotorized recreation; increases the public's access to the river; improves functionality of the Capital Crescent Trail (CCT) as it connects to the Georgetown Waterfront Park; and respects the historic character, natural resources, and existing recreational use of the C&O Canal NHP and Rock Creek Park.

Substantial boating activity occurs on the Potomac River offshore from the NMBZ, where favorable currents and winds combine to create ideal flat water conditions. The flat water upstream of Key Bridge and the natural shoreline that provides a safe exit from the water attracts large numbers of both paddlers and rowers who make heavy use of the Potomac River in this area (approximately 1,500 boaters during the busy spring season). Multiple crew teams practice in the area daily during the rowing season. In addition, several rowing regattas are conducted each year, involving both high school and collegiate racing teams (Louis Berger 2013). Currently, public access points for nonmotorized boating and paddle sports (canoeing, kayaking, rowing, and paddle boarding) are limited, and capacity at current boathouse facilities and related amenities (boat storage, concessions, access facilities, boat rentals, beach, and docks) along the Georgetown waterfront are insufficient. Many hikers, walkers, cyclists, and commuters use the CCT through Water Street, NW, in the NMBZ (Louis Berger 2013). The current configuration of the CCT and its connection to Georgetown does not provide safe and compatible access for pedestrians and bicyclists with motorized vehicles to and through the recreation zone. Conflicts between CCT users and nonmotorized boat use are most prevalent during boating events when the area along Water Street, NW, is used as a staging area for regattas (Louis Berger 2013).

Project Location

The NMBZ was established as part of the Master Plan for Georgetown Waterfront Park and C&O Canal NHP (Georgetown Sector) approved and adopted in 1987. The NMBZ is bounded on the south by the Potomac River shoreline and includes a segment of Rock Creek Park between the Potomac Aqueduct Bridge Abutment and Pier (Alexandria Aqueduct) and Georgetown Waterfront Park and a segment of the C&O Canal NHP upstream of the Alexandria Aqueduct (figure 1). The entire project area is located within the boundary of the Georgetown Historic District, which is listed in the National Register of Historic Places (NRHP). The eastern, or downriver, boundary of the NMBZ is at 34th Street, NW. The western, or upriver, boundary of the NMBZ is approximately 1,100 feet upstream of Key Bridge. The northern boundary of the NMBZ is Water Street, NW, east of the Alexandria Aqueduct, and the CCT right-of-way, west of the Alexandria Aqueduct. The western limit reflects an NPS policy to preserve the natural appearance of the Potomac Palisades (Louis Berger 2013).



1
 2

Figure 1. Project Site

Purpose

The purpose of this report is to provide an assessment of the potential effects of the proposed alternatives for the NMBZ on cultural resources. Following Section 106 of the National Historic Preservation Act of 1966 (54 United States Code [U.S.C.] 306108) as outlined in the federal regulations providing for the Protection of Historic Properties (36 Code of Federal Regulations [CFR] Part 800), this report first identifies cultural resources within the project's area of potential effects (APE). For the purposes of this assessment, a property is considered historic if it is listed or is eligible for listing in the NRHP, the nation's official list of cultural resources that are federally recognized as worthy of preservation. Following the identification of historic properties, this report applies the Criteria of Adverse Effects as provided in 36 CFR 800.5 to determine if the proposed undertaking may alter, directly or indirectly, any characteristics of a historic property in a manner that would diminish its integrity. The information contained in this report has been incorporated into the environmental assessment (EA) for the NMBZ Development Plan. This report also will be submitted to the District of Columbia Historic Preservation Officer (DCHPO) in coordination with the preparation of the EA. It will be used as a basis for consultation between the agencies concerning the possible effects of the proposed undertaking on cultural resources.

SUMMARY OF ALTERNATIVES

Two alternatives were considered—a no action alternative and an action alternative that includes several options for development and addresses the need for nonmotorized boating facilities within the NMBZ along the Potomac River in Georgetown.

Alternative 1: No Action Alternative

Under the no action alternative, no new nonmotorized boathouse facilities would be constructed, and capacity for nonmotorized boating and recreation on the Potomac River in Georgetown would remain the same, with most rowers, including universities, high schools, and individual rowers or rowing groups using Thompson Boat Center. Other rowers would continue to use the private Potomac Boat Club. The Washington Canoe Club would remain in operation, serving paddlers who are members of the club, and negotiations concerning the use and renovation of the building in which the canoe club is housed would continue. The concession currently known as Key Bridge Boats also would continue in its current configuration, providing public rentals of kayaks, canoes, and paddleboards. The site east of the Key Bridge and the space immediately under the bridge would remain unimproved and would continue to serve as a storage yard for the city.

In addition, the CCT would continue to terminate at the Alexandria Aqueduct, and the transition from the trail to Water Street and the Georgetown Waterfront Park would remain confusing. This confusing transition makes it dangerous for cyclists, motorists, and pedestrians along Water Street. Although the C&O Canal NHP installed a gate at the aqueduct, motorists still try to push through the gates because their GPS units cannot tell whether they are on the Whitehurst Freeway overhead and about to intersect with Canal Road and M Street or on Water Street at the entrance to the park, and wayfinding along Water Street is inadequate to provide direction to these wayward motorists.

Alternative 2: Nonmotorized Boathouse Zone

The action alternative is based on preliminary design and focuses on the appropriate buildable area for each zone and how that area could be used to provide access to favorable flat water conditions for nonmotorized boating and improve on-shore amenities. The action alternative allows phased development

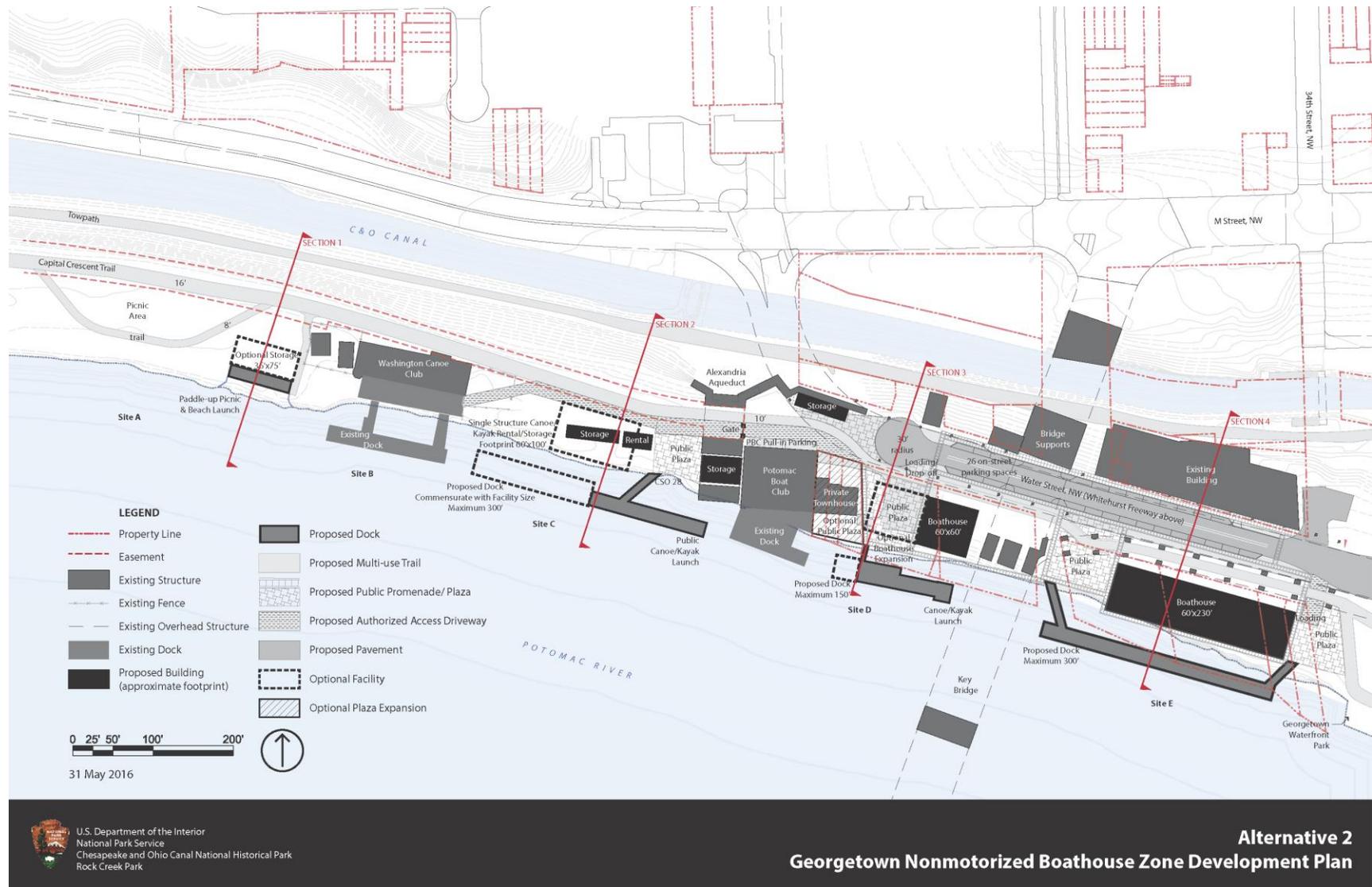
of nonmotorized boating facilities for both rowing programs and recreational paddlers, while providing planning flexibility in future size, placement, and design of these facilities.

The zone has been divided into five sites with sites A–C west of the Alexandria Aqueduct in the C&O Canal NHP and sites D and E east of the Alexandria Aqueduct and the Potomac Boat Club. Sites D and E sit on land administered by Rock Creek Park (figure 2). Overall, the implementation of this alternative would be phased, most likely starting with sites D and E. A summary of the proposed improvements to sites A–E is provided below, with more details provided in table 1 and an illustration of the massing for the facilities provided in figures 3 through 6.

- **Site A:** Site A would include shoreline improvements, a sloped shoreline launch for canoes/kayaks/paddleboards, a picnic area that could include tables and grills or other amenities, and a trail/boardwalk through the site. Based on future need, site development may include the option of constructing a small, single-story boat storage area with a footprint of no greater than approximately 2,700 SF.
- **Site B:** The Washington Canoe Club and its facilities are located within site B. The only actions proposed on this site would include general site restoration, rehabilitation of the structure, reconfiguring or removing the fenced yard, altering the authorized access driveway so that it services the facility, and providing controlled public access across the Washington Canoe Club apron to site A.
- **Site C:** Site C would provide a canoe/kayak rental/storage facility that could be one single structure or multiple smaller structures. The total facility footprint would be no greater than approximately 6,000 SF with no more than two stories and a maximum height of 35 feet. The size of the adjoining public apron and dock would be commensurate with the ultimate size of the new facility or facilities, but not longer than 300 feet.
- **Site D:** The primary configuration of the boathouse facility at site D assumes that the privately owned townhouses would remain in private ownership and be excluded from the nonmotorized boathouse zone. Therefore site D would include the construction of a smaller boathouse with an approximate footprint of 3,600 square feet (possibly up to 4,200 square feet, although a boathouse that size would restrict boat maneuverability in the plaza), a dock up to 150 feet long, a plaza, and ground-level boat storage. Both the dock and plaza areas would be accessible to the public except during permitted events (i.e., regattas and team practices). The proposed boathouse could be designed for a maximum height of 45 feet or up to three stories. If the townhouses were to become available for inclusion in the project at some point in the future, options for a larger boathouse (7,200 SF) on that site, with the public plaza shifted to the west, could be considered.
- **Site E:** Site E would include construction of a large boathouse with a footprint of up to approximately 13,800 SF, with a dock up to 300 feet long, ground-level storage, and plaza areas. Both the dock and plaza areas would have public access except during permitted events (i.e., regattas and team practices). Treatments and configurations for Water Street NW and links between the CCT, the street, and Georgetown Waterfront Park would include drop-off and temporary storage areas for car-top users to leave their boats while they park on Water Street NW or in a parking garage. The site would also include an apron with vehicular access from Water Street NW at 34th Street NW and a public plaza/apron with dock access at the west end of the boathouse.

TABLE 1. DETAILS OF ALTERNATIVE 2

Feature	Alternative 2: Nonmotorized Boathouse Zone
Rowing program support	<ul style="list-style-type: none"> • Site C: Up to ~6,000 SF second floor • Site D: Up to ~3,600 SF to ~4,200 SF second floor • Site D: Up to ~3,600 SF to ~4,200 SF third floor • Site E: Up to ~13,800 SF second floor • Site E: Up to ~13,800 SF third floor
User Amenities	<ul style="list-style-type: none"> • Self-serve lockers for car-top drop-off on Water Street NW across from Potomac Boat Club (approximately 36 lockers) • Potential rental racks at site A (approximately 42 racks) • Soft entry kayak launch (walk-in or rental only) (site A) • Dock entry kayak launch (site C) • Self-serve storage (site C) • Car-top launch drop-off and lockers at Water Street NW • Public restrooms (site C) • Picnic area (sites A and C) • Trail/boardwalk (site A) • Separated multiuse trail on Water Street NW • Restricted access driveway for service and emergency vehicles (sites A, B and C) • Seasonal outdoor boat storage • Public plaza/deck
Shoreline	<ul style="list-style-type: none"> • Shoreline improvements (i.e., remove riprap, debris, and near-shore sediments; create a natural shoreline profile; restore alluvial bench vegetation; improve near-shore habitat; and stabilize natural beach entry kayak launch [site A, and possibly site C]) • Minor shoreline fill and limited bulkhead construction and piles to accommodate boathouse construction (sites E, D, and possibly C) • Possible excavation of first floor by 2 to 3 feet at sites D and E below current grade to reduce height above mean low water level and ramp length
Alexandria Aqueduct	<ul style="list-style-type: none"> • Viewing terrace on top • Boat storage under archway (approximately 20 racks)
Vehicular Access C&O Canal NHP	<ul style="list-style-type: none"> • Authorized vehicles only beyond the Alexandria Aqueduct via NPS driveway (10 feet wide) • Gate at the Alexandria Aqueduct
Vehicular Access Water Street	<ul style="list-style-type: none"> • Street section: <ul style="list-style-type: none"> – Two travel lanes – 26–36 metered parallel parking spaces (depending on curb cuts and final design) – 30-foot radius cul-de-sac • Public plaza/apron with limited loading on site C • Public plaza/apron with designated loading zone on site D between existing townhouses and proposed boathouse • Public plaza/apron with designated loading zone at 34th Street NW • Short-term drop-off storage for car-top paddle craft for use while visitors park or retrieve their vehicles (includes potential for some of this storage to be longer term) • Traffic calming pavement design similar to Georgetown Waterfront Park materials to minimize conflicts between uses within congested loading zones
Multiuse Trail	<ul style="list-style-type: none"> • CCT transitions to 10-foot wide east of the Alexandria Aqueduct and continues on south side of Water Street NW between Whitehurst Freeway columns, connecting to Georgetown Waterfront Park • Shared bike lanes in Water Street NW with transition between trail and cul-de-sac
Parking	<ul style="list-style-type: none"> • Parking required for boathouses may be provided on-street or in local garages; 26–36 on-street parking spaces on Water Street NW provided, with short-term drop-off parking in the cul-de-sac

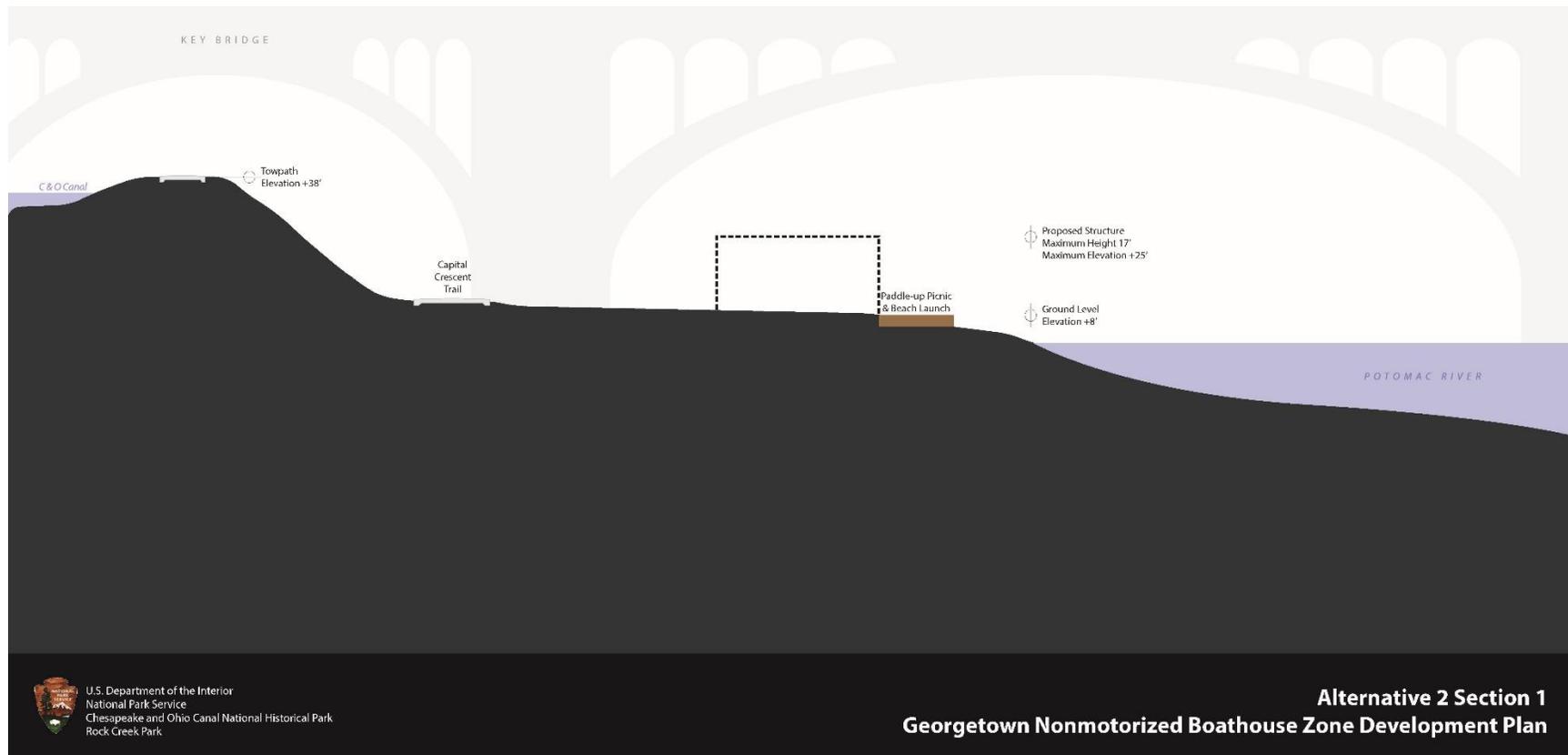


1
 2
 3

Figure 2. Alternative 2



31 May 2016

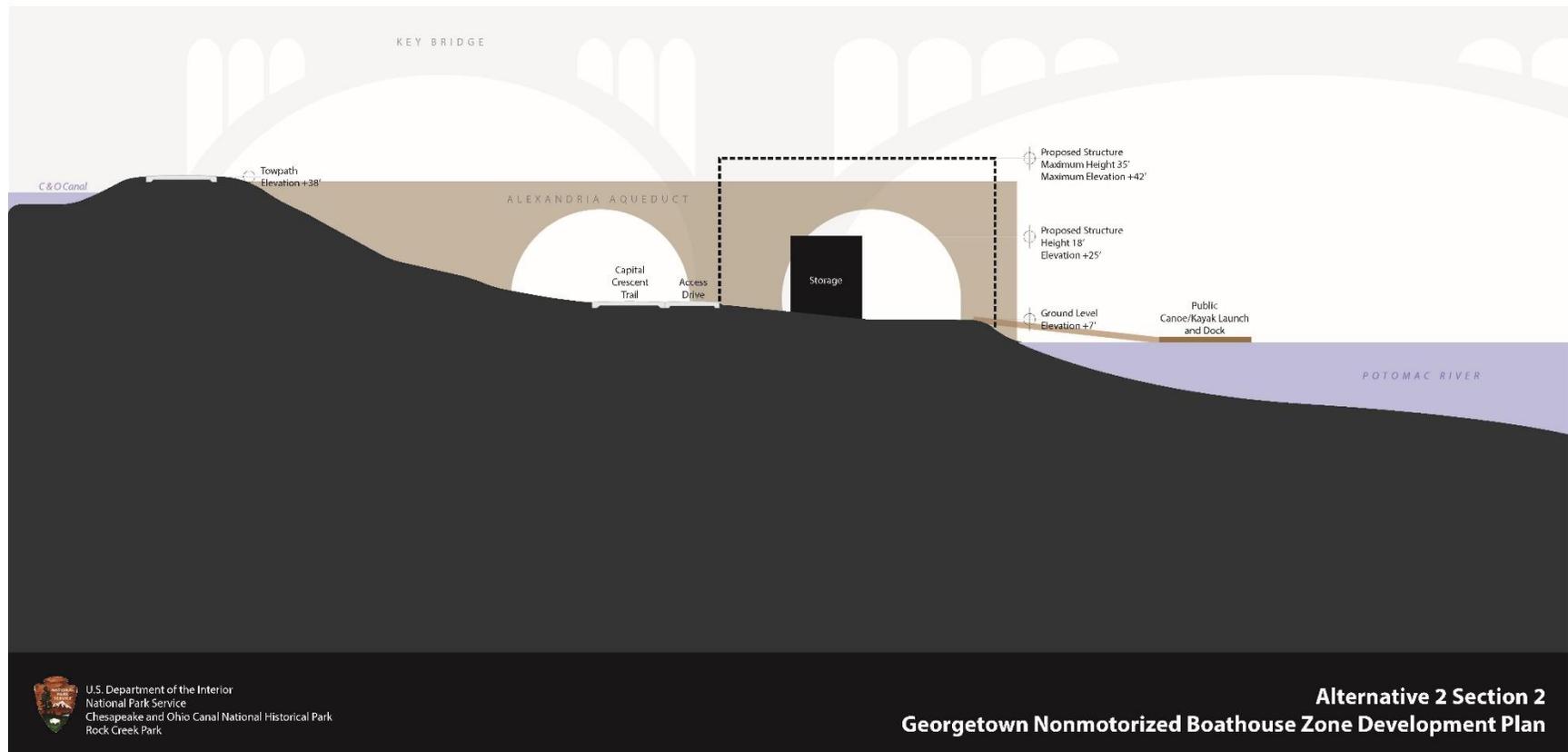


4
5

Figure 3. Cross Section at Site A



31 May 2016

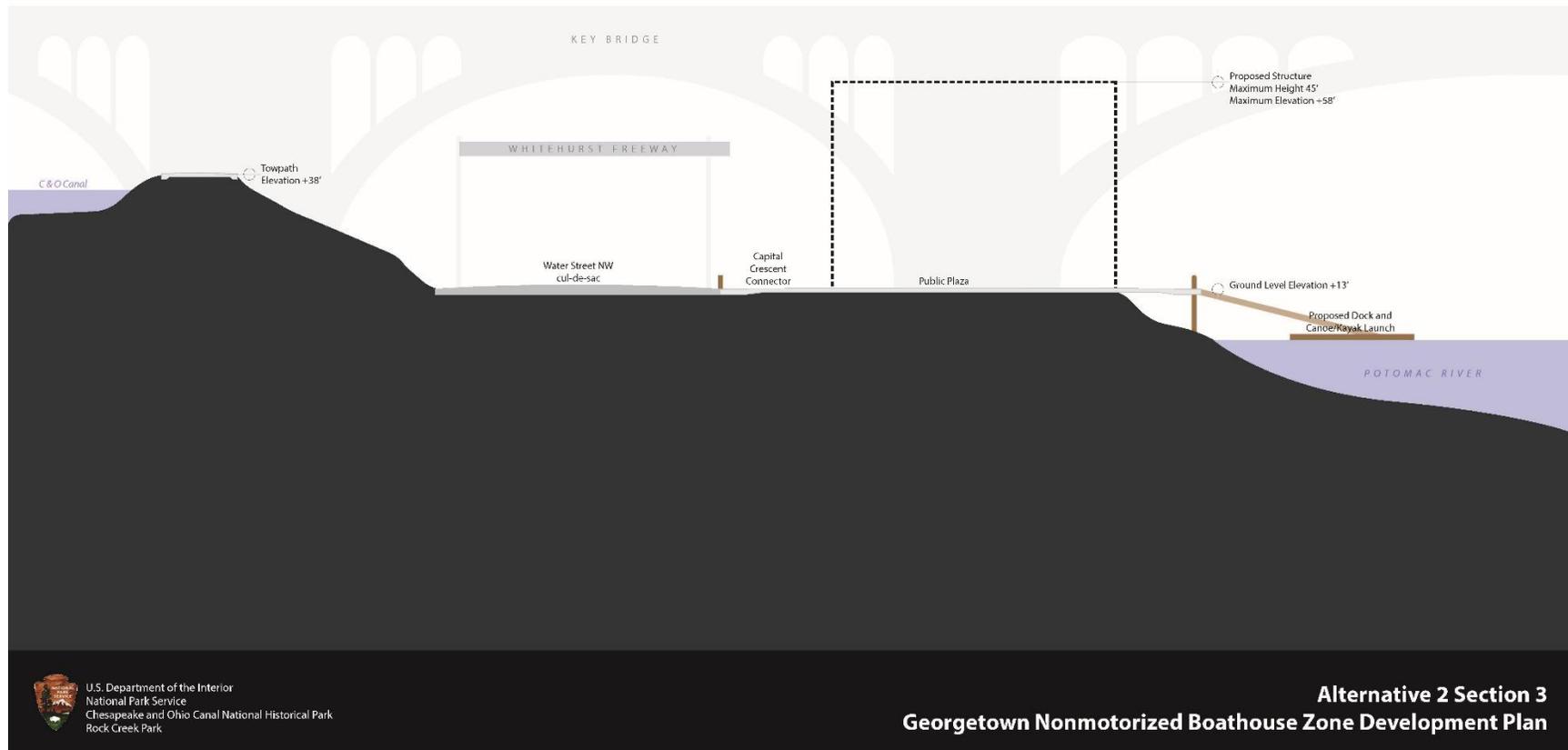
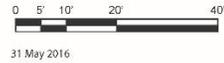


U.S. Department of the Interior
National Park Service
Chesapeake and Ohio Canal National Historical Park
Rock Creek Park

Alternative 2 Section 2
Georgetown Nonmotorized Boathouse Zone Development Plan

6
7

Figure 4. Cross Section at Site C



8
9

Figure 5. Cross Section at Site D



31 May 2016

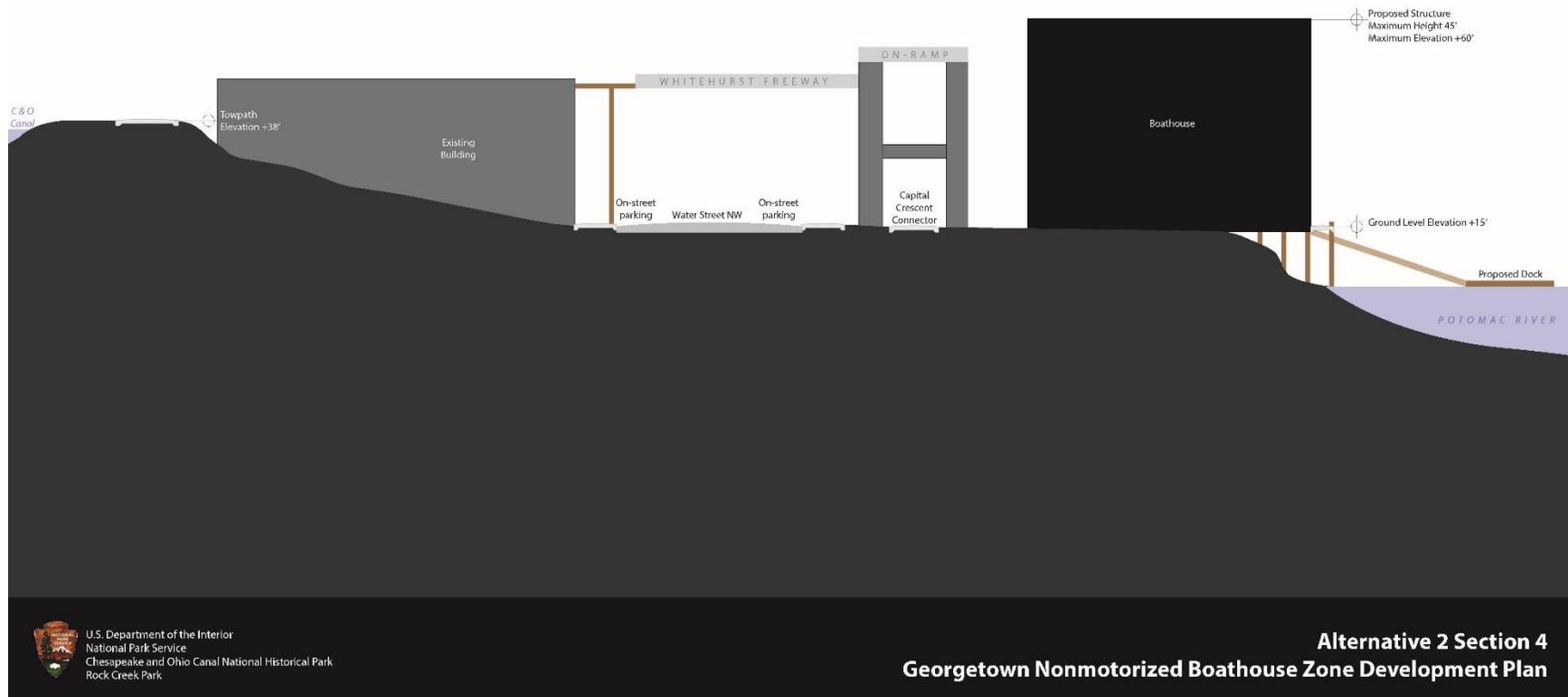


Figure 6. Cross Section at Site

10
11

IDENTIFICATION OF CULTURAL RESOURCES

Areas of Potential Effect

According to the Section 106 regulations (36 CFR 800), an APE is defined as the geographic area or areas in which an undertaking directly or indirectly may cause alterations in the character or use of historic resources or properties, if such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.

Separate APEs for direct and indirect effects have been delineated for the project as depicted in figure 7. The APE for direct effects (shown as the primary APE in figure 7) encompasses the proposed project area, extending from 34th Street, NW, at the western edge of Georgetown Waterfront Park to approximately a quarter of a mile upriver from Key Bridge in the District of Columbia. The APE for indirect effects (shown as the secondary APE on figure 5) considers potential visual impacts on surrounding historic properties adjacent to the undertaking. The western, northern, and eastern boundaries of the APE for indirect effects north of the Potomac River coincide with the Georgetown Historic District boundary. The APE for indirect effects extends east to 27th Street at K Street then follows Virginia Avenue, SW, to the south. The boundary proceeds south behind the Watergate Complex and the John F. Kennedy Center for the Performing Arts. The southern edge of the APE for indirect effects follows the Roosevelt Bridge and the southern boundary of the George Washington Memorial Parkway (GWMP).

Historic Context

Georgetown was laid out in 1751 and soon flourished as a tobacco port town and shipping center with a profitable European and Caribbean trade. In 1789, the same year that Georgetown lobbied Congress to locate the federal city here, the Maryland Assembly incorporated Georgetown as an independent town. In 1791, Georgetown became part of the 10-square-mile federal city. Over the course of the next decade, Georgetown prospered. Local fortunes were made in shipping and real estate, and development of the town began to spread beyond the banks of the river. While hotels, taverns, banks, and other commercial buildings were clustered along M Street and the waterfront area, large mansions and smaller, speculative housing began to be constructed above the harbor. By 1814, Georgetown had evolved from a small tobacco inspection station clustered around the harbor to a fully envisioned town, platted virtually in its entirety from the water to north of R Street (DC SHPO 2003).

In the first decades of the 19th century, as the formerly prosperous tobacco trade began to flounder and Georgetown's port began to silt up (exacerbated by the construction of Long Bridge in 1808), and with the competition from the ports of Baltimore and Alexandria for Georgetown's market, the Georgetown economy faced change (DC SHPO 2003).

The construction of the C&O Canal, designed in 1828 to carry raw materials east and finished goods west, helped Georgetown weather this change and was the impetus that transformed it from a tobacco port to a more diversified industrial (low-level processing) and commercial center. While coal shipping dominated the new economy, the processing and shipping of wheat, corn, stone, lumber, and cordwood supplemented the industry. The 30-foot drop from the canal to the Potomac River also provided ample water power for the operation of mills, including flour and paper mills and metal foundries (DC SHPO 2003).

The Baltimore and Ohio (B&O) Railroad Company was also created in 1828 to provide direct transportation for Baltimore to the Ohio River. The Georgetown Branch was constructed beginning in 1892. Georgetown was an attractive location for the branch because of the abundant coal brought

down from to the river by the C&O Canal. The railroad company went into receivership in the late 1890s and construction on the line from Chevy Chase to Georgetown was not completed until 1910 (Coalition for the Capital Crescent Trail 2016).

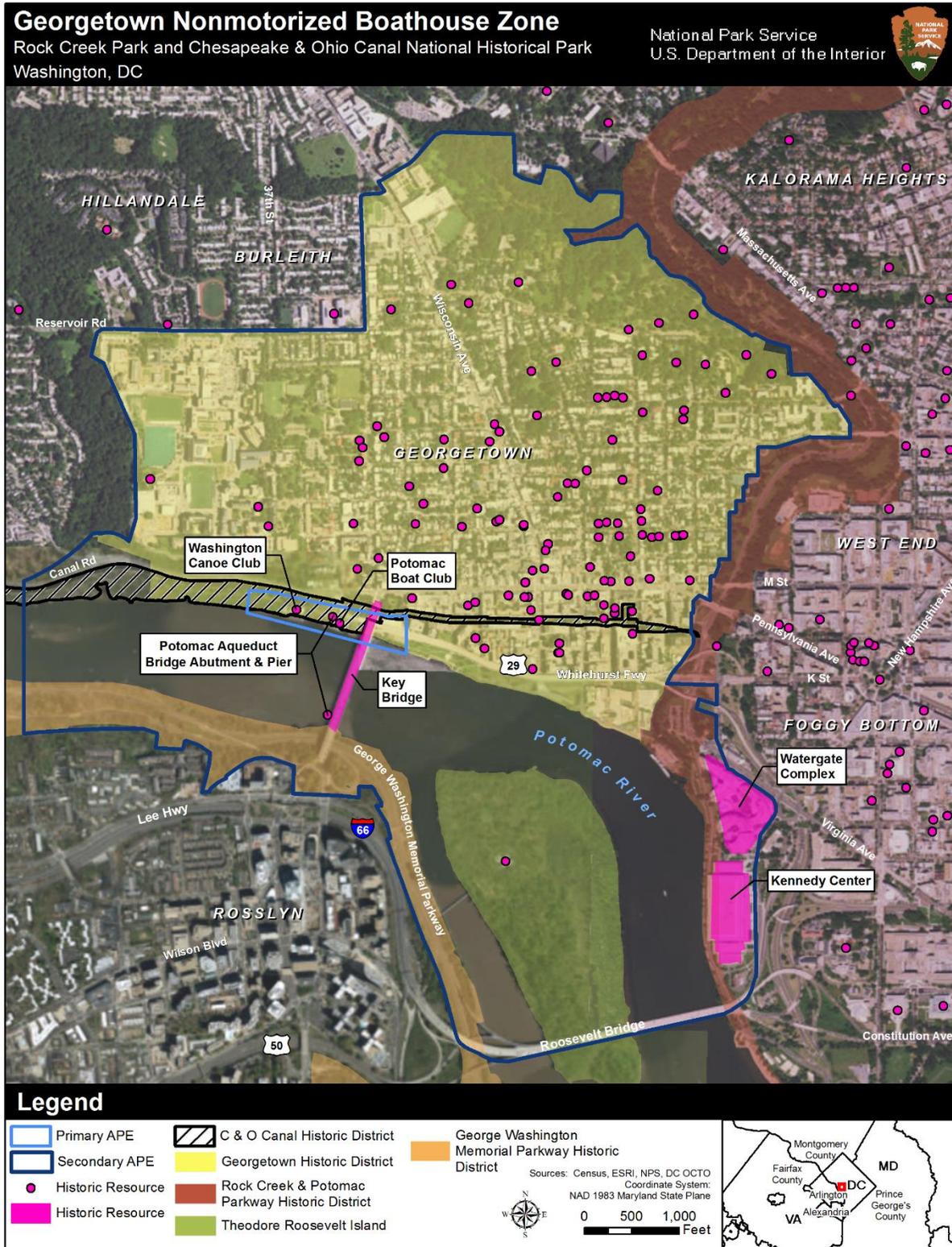


Figure 7. Area of Potential Effect

A flood in 1889 caused enough damage to the C&O Canal to bring about its downfall. The canal had been Georgetown's chief supplier of the wheat, coal, lumber, and other raw materials that kept the waterfront viable. Not only did Georgetown lose its supply line, but the water power to the five flour mills and the paper mill located along the canal was cut off. The well-being of Georgetown's coopeage firms was closely tied to the fortunes of the flour mills that they supplied (NPS 2015).

The most significant changes in the economy of the waterfront took place between 1889, when the flood occurred, and 1915. Although rapid industrialization was taking place in the rest of America during the 1890s, the economy of Georgetown was still based on a bygone era of mule-drawn canal boats, water power, and schooners. Labor-intensive ice-manufacturing businesses moved into old flour mills along the waterfront. Georgetown's long-awaited rail connection came in 1910. Taking advantage of the new rail connection, companies such as the Cranford Paving Company, Brennan Construction Company, Corson and Gruman, Smoot Sand and Gravel Corporation, and the Columbia Granite and Dredging Corporation covered the shoreline with piles of sand, stone, and other construction materials. These companies filled the needs of the automobile age by providing road-building materials. The waterfront area became industrial (NPS 2015).

The rise of the City Beautiful movement and the desire to commemorate the centennial of the establishment of Washington as the seat of government transformed the Georgetown waterfront. In the spring of 1901, the Senate Park Commission was created to develop and improve the entire park system of the District of Columbia. The eventual plan for the system of parks, the McMillan Plan, included the Rock Creek and Potomac Parkway to serve as a link between Rock Creek Park and the National Mall. After studying the locally prepared schematic designs, the professionally acclaimed 1901–1902 Senate Park Commission specified the Rock Creek and Potomac Parkway as the entrance to the proposed comprehensive park system for the nation's capital. In 1913, Congress authorized legislation for the Rock Creek and Potomac Parkway, the first parkway in the metropolitan region and one of the earliest in the country. After a long period of land acquisition, planning, and design, sections of the new parkway began to open in the 1930s (DC SHPO 2003).

While the riverfront was being developed as a parkway south of the Key Bridge, recreational facilities such as the Potomac Boat Club and Washington Canoe Club were being developed along the waterfront around the Potomac Aqueduct (DC SHPO 2003). The Potomac Boat Club, founded in 1859, constructed a boathouse along the Potomac, west of the Alexandria Aqueduct in 1908. The new boathouse was constructed using the form of a second generation boathouse. Unlike first generation boathouses, which were utilitarian sheds that stored shells, second generation boathouses are larger, more elaborate two-story structures that accommodate boat storage on the first floor and social functions on the second (NPS 1990a). The Washington Canoe Club was the first clubhouse built by the newly formed organization in 1904. The club was constructed in two phases with salvaged timbers and wood from burned out barns according to club tradition. The three-story shingle style building, designed by George P. Hales, follows the general form of a second generation boathouse, with boat storage, kitchen, and grill room on the first floor and social spaces on the second floor. By 1930, a one-story boat shed was added to the east. Sometime after 1971, a second floor was constructed on the boat shed addition (NPS 1990b). Both buildings are all that remains of the vibrant history of recreational water sports on the Potomac.

In the 1930s, concern was growing over the state of the natural and historic resources in Georgetown. The Capper-Crampton Act of 1930 established a federal goal of protecting the shorelines of the Potomac River from Fort Washington, Maryland, to Great Falls, Maryland, and identified the Georgetown waterfront as an important element of that shoreline warranting federal protection. The District of Columbia transferred 10 acres of Georgetown waterfront property to the National Park Service for

park purposes, and Georgetown Waterfront Park boundary was formally established in 1984 (Louis Berger 2013).

In 1938, the Department of the Interior acquired the C&O Canal as an historic site, and the National Park Service began restoration of the 22-mile stretch between Georgetown and Seneca. In 1949, when the construction of the Whitehurst Freeway destroyed large numbers of waterfront and canal-related resources, citizens protested and Congress responded by passing the Old Georgetown Act in 1950. This act set the boundaries for the “Old Georgetown” district, which was designated a National Historic Landmark and automatically listed in the NRHP in 1967 (DC SHPO 2003).

The area known as Foggy Bottom became the focus of an urban renewal project in the 1940s that combined indiscriminate clearance of blighted areas with rehabilitation of historic row houses. Construction of the Potomac Plaza residential complex and Theodore Roosevelt Bridge and interstate highways in the area spurred further development. In the late 1950s, Foggy Bottom was chosen as the site for the new national cultural center, named the John F. Kennedy Center less than two weeks after Kennedy’s assassination. The new building was completed in 1971 (Robinson & Associates 2012).

Identification of Historic Districts, Structures, and Sites Within the Area of Potential Effect

HISTORIC DISTRICTS

C&O Canal Historic District

The upstream end of the NMBZ from the Alexandria Aqueduct west is part of the C&O Canal NHP. The canal and its levee run parallel to the river behind the NMBZ on the west side of CCT, rising about 25 feet in elevation above the trail. The C&O Canal is one of the most intact and impressive remnants of the American canal-building era, and its historical significance is the basis for creating the C&O Canal NHP. C&O Canal is listed under Criteria A and C and is historically significant primarily because it embodies 19th century engineering and architectural technology. The canal operated from the late 1820s to 1924 as a route for transporting coal, lumber, and agricultural products from western Maryland to the port of Georgetown and to the navigable lower reaches of the Potomac River.

The Potomac River and the C&O Canal are the primary organizing features of the landscape of the NMBZ. The river terrace and C&O Canal levee provide spatial organization oriented toward the river. In addition, the presence of the Alexandria Aqueduct establishes a portal that divides the NMBZ into distinct character areas (figures 8 and 9). East of the Alexandria Aqueduct along Water Street, NW, the urban character is marked by the presence of buildings adjacent to the river that block views of the river and minimize access. Several open lots and the open character of Jack’s Boathouse are exceptions that are more consistent with the open character of Georgetown Waterfront Park located to the east. Whitehurst Freeway and Key Bridge provide a strong spatial definition of the site by providing a “ceiling.” West of the Alexandria Aqueduct, the site character is more rural; the Washington Canoe Club is the only structure and the area has significantly more vegetation. Views to the river are open, and a strong boundary is created by the C&O Canal levee. The spatial organization of the site is mimicked along the C&O Canal towpath, which crosses below Whitehurst Freeway to establish a “threshold” between city and nature. As discussed previously, the topography of the site is dominated by the C&O Canal levee and flat riverside terraces formed by construction fill. The topography is a significant component of the site’s spatial organization.

In addition, as noted above, the vegetation at the site is a strong contributor to its present character. Historic photographs indicate that the forested condition is relatively recent. The forest cover obscures the relationship of the C&O Canal to the Potomac River. The vegetation provides a continuum with the

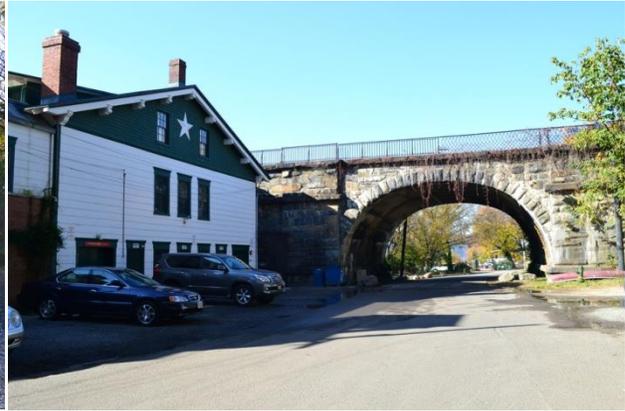
forested embankment of the C&O Canal that distinguishes the areas east and west of the Alexandria Aqueduct and reinforces the spatial organization of the NMBZ.

The circulation patterns in the NMBZ are predominantly water-based. The Washington Canoe Club, Potomac Boat Club, and Jack's Boathouse provide access to the Potomac River from within the NMBZ.



Source: Louis Berger 2013

Figure 8. Rural Character West of the Alexandria Aqueduct



Source: Louis Berger 2013

Figure 9. Urban Character East of the Alexandria Aqueduct

In addition, Thompson Boat Center, located downstream from the zone, is a significant launching point for paddle craft using the river offshore from the NMBZ. The Washington Canoe Club and Potomac Boat Club are private clubs that offer access only to their members. Jack's Boathouse and Thompson Boat Center offer access to the public. The other significant circulation feature is the CCT, which is a major regional trail and provides access for commuters and recreationists. CCT is 12 feet wide but occupies a 30- to 40-foot-wide easement that encompasses the original B&O railroad embankment on which it is built. The trail is linked to Water Street, NW, which is the main circulation spine east of the Alexandria Aqueduct. Water Street, NW, lacks delineated lanes and conveys the impression of a parking lot as much as a street.

The Potomac River is the primary feature of the NMBZ. Within the NMBZ, views and vantage points that are significant as character defining features of the region as a whole are those that establish the relationship of the various cultural features to the natural setting, to the history of the C&O Canal, and to one another. These views and vantage points include the forested slope of the C&O Canal levee and to a lesser extent the forested edge of the NMBZ, which establishes the natural character of the Potomac River above Georgetown. The view through the Alexandria Aqueduct from both directions is important in that it marks a symbolic transition from city to nature in the form of a literal threshold marked by the arch of the aqueduct.

No small-scale features of significance are located in the NMBZ.

The entire length of the canal is listed on the NRHP because of its historical significance for architecture, engineering, commerce, transportation, military history, and conservation (NPS 1971).

Georgetown Historic District

Georgetown was founded by an act of the Maryland Assembly in 1751 and became part of the District of Columbia upon its establishment in 1791, although it remained a separate jurisdictional entity within the District until 1871. The Georgetown Historic District is a remarkably intact example of a historic port town and encompasses the area originally laid out in 1751. Its narrow grid streets contrast from the wide streets of L'Enfant's Plan, and its collection of buildings and structures are among the city's oldest, demonstrating a rich variety of residential, commercial, institutional, and industrial examples. The historic district was first established by the Old Georgetown Act in 1950 and listed in the DC Inventory of Historic Sites in 1964. In 1967, the Georgetown Historic District was designated a National Historic Landmark and was listed in the NRHP under Criteria A and C (DC SHPO 2003). The former B&O Railroad, now the CCT, is within the Georgetown Historic District boundary. The Waterfront Park area of the historic district may also contain unsurveyed sites associated with waterfront industrial warehouses that were present at that location around 1888 when the B&O Railroad was constructed.

George Washington Memorial Parkway

The GWMP was listed in the NRHP in 1995 and comprises 7,146 acres and extends 38.3 miles along the Potomac River. The resource in Virginia is composed of two sections, the southern section that extends from Arlington Memorial Bridge Gateway to Mount Vernon and was opened in 1932. The northern section runs 9.7 miles from Memorial Bridge to the Capital Beltway/Interstate 495 in Virginia and opened in 1965. The parkway has a period of significance from 1930 to 1966. Under Criterion B, the GWMP is significant for the Potomac River corridor's association with George Washington. Under Criterion C, the parkway is significant for landscape architecture designed by Frederick Law Olmsted, Jr., Charles Eliot, and Gilmore D. Clark (NPS 1995a). Built with the twin purposes of conserving Potomac Gorge and connecting historic sites associated with George Washington, the views from the parkway were designed by landscape architects to capitalize on both the scenic value of the river valley and the monumental character of the nation's capital. Historic vistas, such as those toward Georgetown, were preserved by planners and engineers by managing vegetation and small-scale features along the road and framing the various vistas with bridges, natural systems, and circulation features. These views have been altered over time as vegetation has grown along the parkway but remain a significant and character-defining feature of the GWMP (Donaldson 2009). A 2009 cultural landscapes inventory of GWMP-North identifies contributing landscape characteristics that include natural systems and features, spatial organization, land use, topography, vegetation, circulation, buildings and structures, views and vistas, small-scale features, and archeological sites (Donaldson 2009).

Theodore Roosevelt Island

Theodore Roosevelt Island is an 88.5-acre island that sits in the Potomac River near the Key Bridge. Although the island is accessed in Virginia, it is part of Washington, DC. The Theodore Roosevelt Memorial Association bought the island in October 1931; it was transferred to the federal government in March 1932 to serve as a national memorial to President Theodore Roosevelt. The island honors the 26th president primarily for his role as a leader in conservation, exhibited in the natural features of the island itself, including its lands, waters, flora, and fauna. In 1967, a large open-air architectural monument commemorating Roosevelt was completed on the northern end of the island. Roosevelt Island, administratively part of the GWMP, was listed in the NRHP in 1967 under Criteria A, C, and D, and its nomination was updated in 1999 (NPS 1999).

Rock Creek and Potomac Parkway Historic District

The property known as the Rock Creek and Potomac Parkway occupies the gorge and rim of the lower Rock Creek Valley (the section of the valley south of the National Zoological Park) and a stretch of land along the Potomac riverfront. The linear park is approximately 180 acres; it varies in width from several dozen feet at its southern end to more than 500 feet near the northern boundary. The riverfront incorporates a grassy embankment, and the valley contains rock outcroppings, a variety of hardwood groves, a myriad of shrubs and dense understory, invasive vines, and a few grassy swards with specimen trees. The historic district incorporates a variety of extant 19th-century industrial structures, the earliest of which dates to 1828. Bridges are the most prominent extant cultural resources. Several stone retaining walls exist near bridge abutments, steep embankments, and along the creek. The dominating feature of the park is the Rock Creek and Potomac Parkway. The historic district is a DC landmark and was listed in the NRHP in 2005. The Rock Creek and Potomac Parkway meets Criteria A and C in the areas of community planning and development, engineering, recreation, and landscape architecture. The property's period of significance, 1828–1951, is defined by the beginning of construction of the C&O Canal and the erection of The Arts of Peace sculpture groups (NPS 2005a).

HISTORIC BUILDINGS, STRUCTURES, AND SITES

Potomac Aqueduct Bridge Abutment and Pier (Alexandria Aqueduct)

The Georgetown abutment and stone pier, located within the NMBZ, are remnants of the C&O Canal aqueduct over the Potomac built between 1833 and 1843 and designed by Maj. William Turnbull, US Topographical Engineers. The aqueduct bridge was a major early-19th-century engineering achievement involving construction of piers to bedrock 35 feet under the waterline. During the Civil War, the structure was drained and used as a highway bridge. The canal was reconstructed with a wooden Howe truss in 1868 with a highway bridge above. Iron trusses were added in 1888, and the canal was converted to a bridge. In 1933, the superstructure was removed. The piers were cut down in 1962. The remnants of the aqueduct received DC landmark designation on January 23, 1973 (DC SHPO 2009).

Washington Canoe Club

The Washington Canoe Club is located on a narrow strip of land between the bank of the Potomac River and the C&O Canal at the western end of K Street just west of the Alexandria Aqueduct. The CCT runs immediately behind the building. The club was constructed in 1904 and remains an excellent example of shingle style architecture characterized by octagonal towers, cross-gabled roof with louvered cupola, a central pavilion with flanking balconies, shaped verge boards in the prominent gable end, and shingle cladding. The building received DC landmark designation on January 23, 1973, and was listed in the NRHP in 1991 (NPS 1990b; DC SHPO 2009).

Potomac Boat Club

The Potomac Boat Club also is located on the western end of K Street, just east of the Alexandria Aqueduct. The boat house, which exhibits Craftsman style influences, was constructed in 1908 as the second structure for the Potomac Boat Club. The two-story frame boat house displays typical characteristics of its type, including a façade that faces the river, a low-pitch front-gabled roof, a tower, boat ports, large French doors, and shingle cladding. As one of only two remaining early-20th-century boat clubs along the Potomac River in the District of Columbia, the Potomac Boat Club received DC historic landmark designation on January 23, 1973, and was listed in the NRHP in 1991 (NPS 1990a).

Francis Scott Key Bridge

The Francis Scott Key Bridge spans the Potomac River between Georgetown in Washington, DC, and Rosslyn in Arlington County, Virginia. The bridge, which carries US Route 29, has a northern approach at the foot of 35th Street, NW. The Francis Scott Key Bridge is a skillfully designed reinforced concrete arch bridge. Originally constructed to provide automotive, trolley, and pedestrian transit, the bridge has served as an important link between Washington and northern Virginia. Nathan C. Wyeth designed the bridge in 1916, and construction was completed in 1923. The structure is noteworthy for its elegant and simple Classical design. The Classically inspired structure comprises reinforced concrete, with eight arches. Five of the arches span the river, while the other three span land features. The original structure, designed in 1916 and constructed between 1917–1923, included seven arches. The eighth arch was added in 1938–1939 to span the GWMP in Virginia. The superstructure was altered in 1955 and 1987. The bridge was listed in the NRHP in 1996 under Criterion C in the area of engineering and because it was designed by an important local architect, Nathan C. Wyeth (NPS 1995b).

Watergate Complex

Watergate, a unified complex consisting of six interconnected buildings constructed between 1964 and 1971, is one of the most well-known complexes in Washington, DC, politically and architecturally. Notwithstanding the building's significance for its associations with the 1972 Watergate scandal, the complex embodies exceptional architectural significance as an outstanding and innovative example of the Modern Movement in Washington, DC. The scale and mixed-use program of Watergate required the formation of Washington's first private initiative Planned Unit Development, a new and largely untested idea in urban planning. The complex was listed in the NRHP in 2005 and received DC landmark designation the same year (NPS 2005b).

John F. Kennedy Center for the Performing Arts (Kennedy Center)

Located at 2700 F Street, NW, at the intersection of New Hampshire Avenue, NW, and the Rock Creek and Potomac Parkway, the John F. Kennedy Center for the Performing Arts is situated on a prominent site overlooking the Potomac River at the western edge of the Monumental Core of Washington, DC. The Kennedy Center was constructed between 1964 and 1971 and dedicated in 1971 as a national performing arts center and as a monument to President John F. Kennedy. It is eligible for listing in the NRHP for its national significance related to the life of President John F. Kennedy and for its modern architecture designed by 20th-century master architect Edward Durell Stone (Robinson & Associates 2012).

Identification of Cultural Landscapes in the Area of Potential Effect

The GWMP is considered a cultural landscape. A cultural landscape inventory, completed by the National Park Service in 2009, identified contributing landscape characteristics that include natural systems and features, spatial organization, land use, topography, vegetation, circulation, buildings and structures, views and vistas, small-scale features, and archeological sites (Donaldson 2009). The project area is visible from the GWMP from the Francis Scott Key Bridge to North Oak Street. The view west of North Oak Street is obscured by dense vegetation.

Identification of Archeological Resources in the Area of Potential Effect

Because of a long history of development and occupation of the land in the zone, there was concern there could be archeological resources in the project area that could be affected. A Phase 1A archeological evaluation that included taking soil cores determined a very low likelihood for archeological resources that could be disturbed in most of the project area. There is potential for

resources at site A, but the soil cores indicate these resources are at least 6 feet below the surface, and the proposed facilities in this area would not require disturbance to that depth (Louis Berger 2015). The potential for submerged resources was also considered. However, sea level rise in the Potomac has generally taken the form of erosion, not submergence, so the presence of submerged resources is highly unlikely. Other than shipwrecks, no submerged archeological sites are known in the Potomac or Anacostia Rivers (Katz et al. 2015).

ASSESSMENT OF EFFECTS

Methodology

To assess the potential effects of the proposed “Georgetown Nonmotorized Boathouse Zone Development Plan” on historic properties, this report applies the Criteria of Adverse Effect, as defined in 36 CFR 800.5, to each historic property within the APEs. The Criteria of Adverse Effect states, “An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the property’s location, design, setting, materials, workmanship, feeling, or association.” Additionally, “adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.” Examples of adverse effects include:

- Physical destruction of/or damage to all or part of the property
- Alteration of a property that is not consistent with the Secretary of the Interior’s Standards for the Treatment of Historic Resources (36 CFR 68) and applicable guidelines
- Removal of the property from its historic location
- Change of the character of the property’s use or physical features within the property’s setting that contribute to its historic significance
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property’s significant historic features
- Neglect of a property which causes its deterioration
- Transfer, lease, or sale of the property out of federal ownership; control without adequate and legally enforceable restrictions; or conditions to ensure long-term preservation of the property’s historic significance

Effects on Historic Districts and Structures within the Area of potential effects

EFFECTS OF THE ALTERNATIVE 1: NO ACTION ALTERNATIVE

Under the Alternative 1, the no action alternative, no new nonmotorized boathouse facilities would be constructed, and capacity for nonmotorized boating on the Potomac River in Georgetown would remain the same. Because no action would be taken, the project would not constitute an undertaking under Section 106.

EFFECTS OF ALTERNATIVE 2

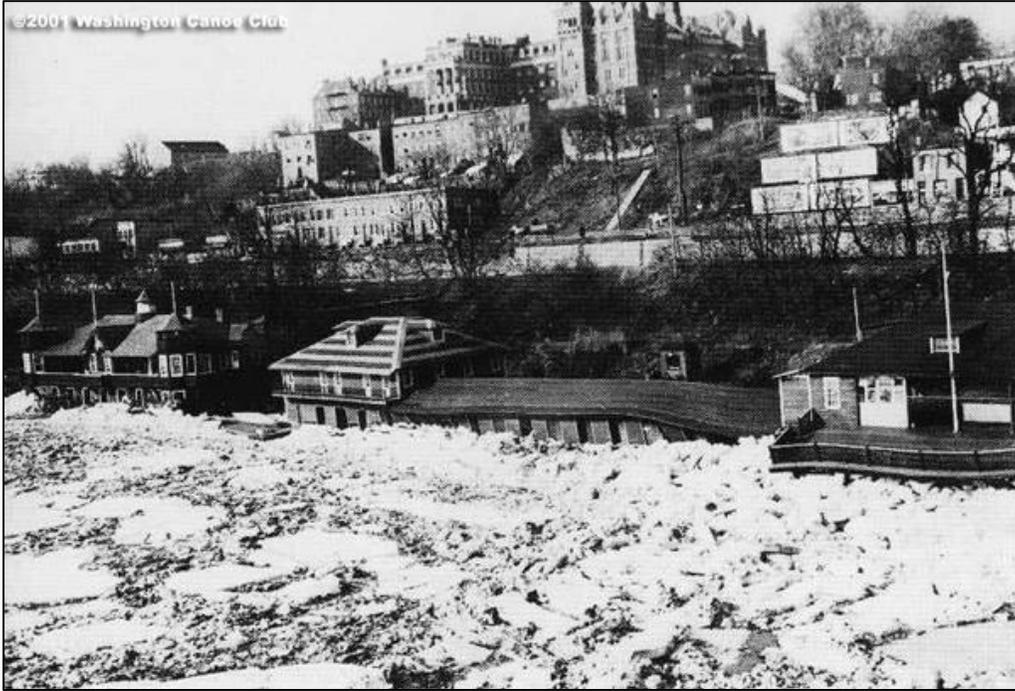
Under Alternative 2, a launch, picnic area and trail would be constructed at site A with an optional 2,700 boat storage building and boathouses would be constructed at sites C, D, and E, all of which are within the boundary of the Georgetown Historic District. All of the proposed boathouses would have footprints

between 3,600 square feet (SF) and 13,800 SF. The optional boat storage building at site A would be approximately 2,700 SF. The maximum height of the boathouses would be 45 feet (see table 1).

Direct Effects

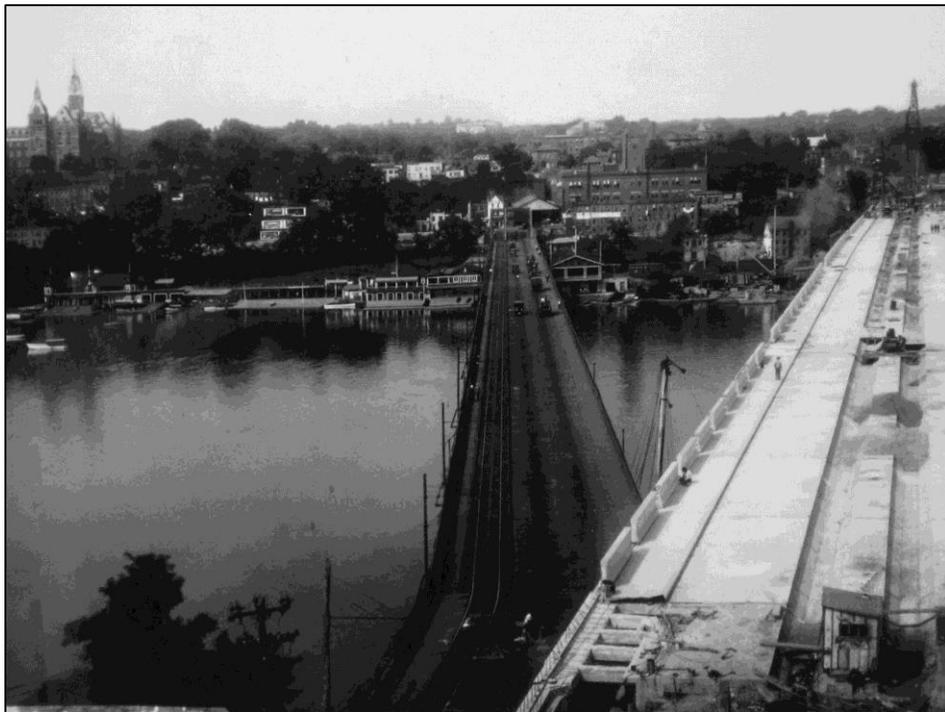
Construction of the new boathouses and optional boat storage building would not have a direct effect on the adjacent NRHP-listed Washington Canoe Club and Potomac Boat Club or on the Alexandria Aqueduct, a DC historic landmark. Their settings would be altered as would the overall landscape of the Potomac River shoreline. However, the new buildings would be in keeping with historic recreational activities in that area. The shoreline near the Alexandria Aqueduct was the site of numerous boathouses, including Dempsey's Boathouse, which was originally located between the Washington Canoe Club and Potomac Boat Club (figure 10). An historic photograph taken during the construction of the Key Bridge shows the entire section of shoreline from the Alexandria Aqueduct to the Washington Canoe Club filled entirely with boathouses, boat storage facilities, and docks (figure 11). The design of the new boathouses at sites C and D would be compatible with the existing boathouses in scale, massing, materials, and design. Moreover, the designs of any new buildings also would be reviewed by NPS, the District of Columbia State Historic Preservation Office (DC SHPO), and local organizations, including the Commission of Fine Arts (CFA) and the Old Georgetown Board, which would ensure their appropriateness within the Georgetown Historic District. *Consequently, there would be no adverse effect from the construction of boathouses and associated storage facilities under Alternative 2.*

Alternative 2 would have a direct effect on the Washington Canoe Club because the building would be rehabilitated according to the Secretary of the Interior's Standards and a fenced yard and outdoor storage would be removed. Pedestrian and service access would be extended from the Washington Canoe Club to boat storage and launches and picnic tables at site A, located to the west. *Any rehabilitation activities would be under the purview of NPS, the DC SHPO, and local preservation organizations, including the CFA and the Old Georgetown Board and thus, would not constitute an adverse effect.*



Source: Washington Canoe Club

Figure 10. Ice Dams along the Potomac River, Washington Canoe Club at Left, Proposed Site C in Center of Photo



Source: Washington Canoe Club

Figure 11. 1922 Photo Showing Shoreline within the NMBZ Site C, at Left of Aqueduct, Site D at Right of Aqueduct and Potomac Boat Club (adjacent to the aqueduct)

Alternative 2 would directly affect the Alexandria Aqueduct because it would include construction of a viewing terrace on top of the Alexandria Aqueduct and boat storage below the aqueduct arch, which has been used as boat storage in the recent past. The exact details of the construction method of the viewing terrace are unknown. The arch of the aqueduct previously has been used as boat storage with racks hanging from the underside of the arch. A fence also has been installed in the openings of the arch. Presumably, the project would be reviewed by NPS, the DC SHPO, and local preservation organizations, including CFA and the Old Georgetown Board because of its location within the Georgetown Historic District. *Consequently, there would be no adverse effect from the viewing terrace and boat storage at the Alexandria Aqueduct.*

The C&O Canal Historic District is immediately adjacent to the north side of the NMBZ and would be directly affected by Alternative 2. Dense vegetation exists between the C&O Canal towpath and the CCT (figure 12). Introduction of new boathouses and optional boat storage building would alter the shoreline but would not change the existing line of vegetation between the towpath and the CCT, which act as a significant visual barrier during the spring and summer. The introduction of new boathouses under Alternative 2 would diminish the setting of the C&O Canal Historic District but would not alter any of characteristics that make the district eligible as a significant example of 19th century engineering and architectural technology. The setting of the district already has been significantly altered by the four-lane Canal Road to the north. *Alternative 2 would have no adverse effect on the C&O Canal Historic District.*



Figure 12. Capital Crescent Trail and Dense Vegetation to the North

Alternative 2 would have a direct effect on the Georgetown Historic District because it would introduce six new non-contributing buildings and two additional optional buildings into a district with approximately 340 contributing buildings, which would slightly diminish the district's integrity. However, the introduction of these modern buildings would not alter the characteristics of the historic district that make it eligible for listing under Criteria A and C and significant as a National Historic Landmark.

Construction of the boathouses and storage facilities under Alternative 2 would alter the landscape of the historic district along the Potomac River. Because of the bend in the river and heavy vegetation along the south side of the C&O Canal towpath, construction activities and the new buildings would not be visible from the north, where most of the contributing buildings in the Georgetown Historic District are located. However, the rooflines of the new boathouses may be visible from Prospect Street. The introduction of these modern buildings would not significantly diminish the district integrity of setting given the limited visibility between Prospect Street and the shoreline. In addition, the designs of any new buildings would be reviewed by NPS, the National Capital Planning Commission, and the Old Georgetown Board, which would ensure their appropriateness within the Georgetown Historic District. The removal of three townhouses for the public plaza option on Site D would have no effect on the historic district as they were determined as non-contributing structures, presumably within the Georgetown Historic District, by SHPO architectural historian Tim Dennee in a letter to Tammy Stidham at the National Park Service, National Capital Region, dated February 4, 2015. *Given the limited visibility of the project area within the Georgetown Historic District and design review by the Old Georgetown Board, there would be no adverse effect on the contributing buildings within the Georgetown Historic District.*

The Key Bridge bisects the NMBZ and would be directly affected by Alternative 2. The bridge is listed in the NRHP under Criterion C in the area of engineering. Construction of new boathouses would diminish the integrity of the bridge's setting but would not diminish the integrity of design, workmanship, materials, location, feeling, or association. *Alternative 2 would not constitute an adverse effect on the Key Bridge.*

Indirect Effects

The GWMP is within the immediate vicinity of the NMBZ and would be indirectly affected by Alternative 2. Commuters and pedestrians using the GWMP would be able to see the changes along the shoreline in varying degrees. Travelers heading in either direction on the GWMP would have an almost unencumbered view of the project area between the Key Bridge and North Lynn Street on-ramp. Dense vegetation west of the on-ramp and east of the Key Bridge would completely obscure the view of the opposite shoreline. The potential development associated with Alternative 2 would alter the setting of the GWMP slightly but would not alter the characteristics of the historic district that contribute to its eligibility under Criterion C. *Therefore, Alternative 2 would not adversely affect the GWMP.*

Theodore Roosevelt Island Historic District would be indirectly affected by Alternative 2 because the setting of the district would be diminished slightly by the introduction of a new boathouse east of the Key Bridge. However, this change to the setting would be negligible in the scale of the overall landscape surrounding the island. Larger scale intrusions including late 20th century high-rise buildings in Rosslyn already have diminished the setting of the historic district. *As such, the small scale boathouses proposed in Alternative 2 would not constitute an adverse effect on the Theodore Roosevelt Island Historic District.*

The Rock Creek and Potomac Parkway Historic District is on the same shore as Alternative 2 and is approximately 0.5 mile downstream. The district would be indirectly affected by Alternative 2 because its setting would be altered. However, views of the project area from the historic district are very limited. The view of the project area is further obscured by the Key Bridge. Given the limited sightlines between the project area and the historic district, the setting of the historic district would not be diminished by the project. *As a result, there would be no adverse indirect effect on this NRHP-listed historic district because of limited visibility of the NMBZ.*

Similarly, the NRHP-listed Watergate and John F. Kennedy Center for the Performing Arts would be indirectly affected because each property's setting would be altered by Alternative 2. Both properties

have limited views of the construction activities associated with Alternative 2 because of obstructions such as Theodore Roosevelt Island and the Key Bridge. *There would be no adverse effect on these NRHP-listed properties because of limited visibility of the NMBZ.*

CONCLUSION

The Assessment of Effects for the Nonmotorized Boathouse Zone Development Plan as an undertaking in accordance with regulations implementing Section 106 of the National Historic Preservation Act would have no adverse effect on the Georgetown Historic District, Washington Canoe Club, Potomac Boat Club, C&O Canal Historic District, Alexandria Aqueduct, Key Bridge, GWMP Historic District, Rock Creek & Potomac Parkway Historic District, Theodore Roosevelt Island, Watergate, and John F. Kennedy Center for the Performing Arts.

REFERENCES

Coalition for the Capital Crescent Trail

- 2016 History of the Georgetown Branch. Accessed March 21, 2016.
http://www.cctrail.org/cct_history.htm.

District of Columbia State Historic Preservation Office (DC SHPO)

- 2015 Letter to Tammy Stidham, Chief, Planning, Compliance and GIS, National Park Service, National Capital Region, from Tim Dennee, Architectural Historian, dated February 4, 2015.
- 2003 Registration Form, National Register of Historic Places. Georgetown Historic District (amended). Prepared by Kimberly Prothro Williams, DC SHPO, Washington, DC.

Donaldson, E.

- 2009 George Washington Memorial Parkway - North Cultural Landscape Inventory. Prepared by Emily Donaldson for the National Park Service.

Katz, G., J. Bedell, S. Fiedel, and D. Wagner

- 2015 *Archeological Overview and Assessment of Anacostia and Kenilworth Parks, District of Columbia*. Prepared for the NPS, National Capital Region by the Louis Berger Group, Inc., Washington, DC.

Louis Berger Group, Inc. (Louis Berger)

- 2015 *Phase IA Archaeological Investigation of the Georgetown Non-Motorized Boat Zone*. Prepared by Louis Berger for National Park Service, National Capital Region, Washington, DC.
- 2013 *Nonmotorized Boathouse Zone Feasibility Study*. Prepared by Louis Berger for the National Park Service, National Capital Region, Washington, DC.

National Park Service, U.S. Department of the Interior (NPS)

- 1971 *Registration Form, National Register of Historic Places. C&O Canal*. Accessed January 6, 2016. <http://focus.nps.gov/nrhp/AssetDetail?assetID=f89d868a-a1d4-4549-a89a-9283c7312fde>.

- 1990a *Registration Form, National Register of Historic Places. Potomac Boat Club.* Accessed January 6, 2016. <http://focus.nps.gov/nrhp/GetAsset?assetID=1e25b957-601d-4f29-aca8-371d7af17bfd>.
- 1990b *Registration Form, National Register of Historic Places. Washington Canoe Club.* Accessed July 20, 2012. <http://pdfhost.focus.nps.gov/docs/NRHP/Text/90002151.pdf>.
- 1995a *Registration Form, National Register of Historic Places. George Washington Memorial Parkway.* Prepared by Jere L. Krakow.
- 1995b *Registration Form, National Register of Historic Places. Francis Scott Key Bridge.* Accessed January 6, 2016. <http://focus.nps.gov/nrhp/GetAsset?assetID=3dd25802-bc32-4b47-8b1c-67b2fc35c959>.
- 1999 *Registration Form, National Register of Historic Places. Theodore Roosevelt Island.* Accessed January 6, 2016. <http://focus.nps.gov/nrhp/GetAsset?assetID=c126b250-bac7-47b4-81c9-e222d0aeacd2>.
- 2005a *Registration Form, National Register of Historic Places. Rock Creek and Potomac Parkway Historic District.* Accessed January 6, 2016. <http://focus.nps.gov/nrhp/GetAsset?assetID=08df9706-5778-48fb-8722-4d67c63a0928>.
- 2005b *Registration Form, National Register of Historic Places. Watergate.* Accessed January 6, 2016. <http://focus.nps.gov/nrhp/GetAsset?assetID=d3abb145-34ab-46bd-8ad5-c753f8f58e68>.

Robinson & Associates

- 2012 *Determination of Eligibility Form, John F. Kennedy Center For the Performing Arts.* Prepared for the DC State Historic Preservation Office, Washington, DC.