

KINGMAN ISLAND AND HERITAGE ISLAND

PLANNING AND FEASIBILITY STUDY ACT OF 2016

JULY 2017

PROPOSAL FOR THE USE OF KINGMAN ISLAND
AND HERITAGE ISLAND FOR EDUCATIONAL,
ENVIRONMENTAL, AND RECREATIONAL PURPOSES



SUMMARY OF PARTIES



Department of Energy & Environment Team

Tommy Wells, Director



Hickok Cole Architects Team

Holly Lennihan
Lindsey Falasca
Guilherme A.M. Almeida
Melanie De Cola



Oehme van Sweden Landscape Architects Team

Lisa Delplace
James Joyce



Real School Gardens

April D. Martin
Evan Dintaman



Anacostia Watershed Society

Ariel Trahan
Emily Conrad



Environmental Leadership Strategies
creating solutions from the inside out

Environmental Leadership Strategies

Don Baugh
Janet Harrison



Skanska

Curtis Elswick
James Ingle
Apryl Webb



Greening Urban

Chris Earley
Gary Woolsey



Living Classrooms (Unofficial Consultant)

Lee Cain



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River Terrace Education Campus students restoring wetlands, with the Anacostia Watershed Society, along Heritage Island.

EXECUTIVE SUMMARY

Proposal/brief description of findings and recommendations

In 1999, Kingman and Heritage Islands (the Islands) were transferred to the District of Columbia with the intent that their use be focused on children. This report lays out a plan to immediately enhance this unique natural resource as an educational and recreational asset for children and residents of the District. In the near-term, strategic and cost effective improvements can be implemented which will facilitate the already successful school and volunteer programs carried out on the Islands. In addition, this document sets out an ambitious long term goal for the Islands: to serve as a focal point in the overall ecological revival of the Anacostia River (the River). Achieving this goal—which includes the design and construction of a sustainable and ecologically sensitive Environmental Center—will require coordination with the National Park Service and numerous District agencies. For this reason, to manage construction costs, and possibly maximize grant funding opportunities, this team proposes that the Masterplan for Kingman and Heritage Islands be an incremental one.

In order to develop a viable plan, the team undertook the following tasks:

- A full assessment of the Island based on site visits, input from entities working on the Island, and existing technical and design documentation.
- Review of previous design proposals.
- Creation of a masterplan for the development of the Islands into an Ecological Learning Zone as well as a family friendly park for neighbors and visitors.
- Development of a design vision for the Islands' landscape and architecture, based on the concept of beckoning visitors along the island trails through the placement of discreet, aesthetically sensitive built elements.
- Generation of a construction and operations budget, to include a plan to phase the work.

Next step:

- Additional outreach efforts to the community, Council Members, the Office of the Deputy Mayor for Planning and Economic Development (DMPED), and various other District agencies and associated nonprofits will be undertaken in conjunction with the District Department of Energy and Environment (DOEE) staff.

This grant team set out to collaborate with those working on the Islands now to design landscape and architectural features that suit the scale and character of the Islands, and to propel the potential for this asset to the next level. Kingman and Heritage Islands must:

- Serve school children of the District by educating them about our natural environment;
- Engage the public in nature focused recreational uses on the Anacostia River; and
- Enhance the ecological health of the District through habitat restoration.



VISION

Vision Statement

The Islands offer a rare and powerful opportunity: in the middle of a busy metropolis, on these man made islands, there is a chance to create an oasis focused on conserving and restoring precious ecosystems. Much of the Anacostia River is wild and scenic—unique in urban waterways. This proposal works to make sure that the Islands are a key component in the river’s identity.

The River was dredged to form the Islands as part of an effort to improve health conditions in the early part of the last century. The Islands were then used as a dumping ground even after their transfer to the District of Columbia, despite the fact that the condition of their transfer was the development of a children’s park. (See Appendix A).

Their remoteness from urban centers is one of the factors that now protects them from the deleterious effects of development and over use. These days, crossing the bridges to the Islands provides the powerful experience of arrival to a special, protected place. From their polluted past, the Islands are being reclaimed through careful curation of disparate ecosystems, including removal of invasive species, protection of endangered plants, and introduction of ecologically appropriate flora.

During the design process, this team developed both a short term and a long term Vision for the Islands. In order to teach about conservation, restoration, and regeneration of the Islands’ ecology, temporal outdoor classrooms will be integrated into the landscape. This will enhance the visitor experience with minimal impact to the ecological health of the Islands. Our approach—to create a series of outdoor classrooms—imagines the Islands as a place to learn about nature without going indoors.

This concept enables a “light touch” with respect to what is built on the Islands themselves. The immediate goal is to focus on creating outdoor classrooms and furthering the restoration of indigenous ecosystems. The long term goal is for the Islands to act as the beacon for the renewed health of the Anacostia River.

Currently the restoration of natural ecosystems is being done, in part, by District school children. This is a unique and empowering educational experience for these young people. To augment this, a more permanent structure, The Anacostia River Environmental Center at the Islands will provide the program and support space for additional educational opportunities. It will also serve the varied needs of the public without detracting from the Islands themselves.

The Environmental Center is proposed to sit at the base of the bridge that leads to Heritage Island, on what is now a far corner of the Robert F. Kennedy (RFK) Stadium parking lot. This siting strategy maintains the ‘light touch’ concept by placing The Environmental Center where it can be tied into existing infrastructure and provide easier access to transportation. In this location, the building becomes a gateway or threshold point to access the Islands. Finally, building The Environmental Center will be a pivotal moment for the regeneration of the entire Anacostia River and not just the Islands themselves.

BACKGROUND RESEARCH & BENCHMARKING

Extensive design research and benchmarking took place during Phase I of this grant. The physical condition of the Islands was considered closely. Geotechnical Reports and U.S. Army Corps of Engineers' Soil Tests were reviewed. Human Health and Ecological Risk Assessment reports were also taken into account prior to proceeding.

To develop a coherent, effective and aspirational plan for the Islands, the team started by walking the site and gathering data on the state of the Islands today. Additionally, one of the tasks associated with this grant is to evaluate previous design proposals. That design work began over a decade ago and the current state of the Islands has changed dramatically. For this reason, benchmarking—establishing the baseline of current conditions—facilitated looking backward at the previous designs and looking ahead to a new vision for this park. There are five main elements of information documented:

- Ecosystem monitoring and restoration efforts;
- Current educational and cultural events;
- Park management and operations;
- Security and access; and
- Construction and operational budget data.

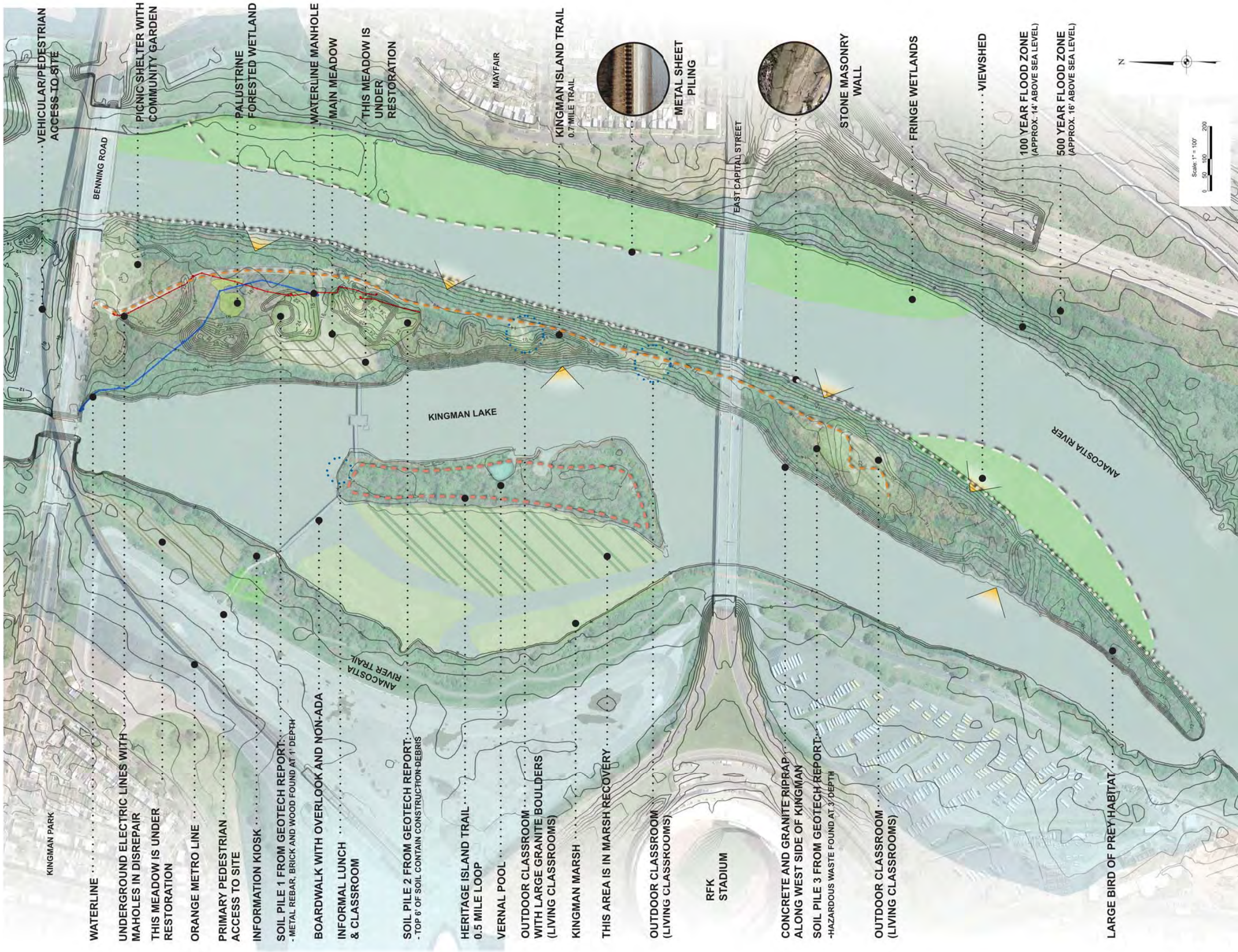


Ecosystem monitoring and restoration efforts

The DOEE Fisheries & Wildlife Division is implementing the State Wildlife Action Plan through the monitoring of rare wildlife and regeneration of critical habitat areas. Improving the condition of native habitats improves their value within the designated Conservation Opportunity Areas. DOEE recognizes that the Islands—along with the surrounding wetlands and mudflats—are very important wildlife habitat, despite their dredge-material soils and semi-natural plant communities. The area is home to several rare animal species and a rare plant that is listed as endangered in Maryland and as a species of special concern in Virginia. The Kingman and Heritage Islands and Wetland Complex is one of eight Conservation Opportunity Areas designated in the District's 2015 State Wildlife Action Plan.

KINGMAN & HERITAGE ISLANDS BASE MAP

EXISTING CONDITIONS



LEGEND

UNDERGROUND WATER LINE	HERITAGE ISLAND TRAIL	VIEWSHED	OPEN SPACE
UNDERGROUND ELECTRICAL LINE	STONE MASONRY WALL	HERITAGE MARSH	VERNAL POOL
KINGMAN ISLAND TRAIL	METAL SHEET PILING	FRINGE WETLANDS	100' YEAR FLOOD ZONE
			500' YEAR FLOOD ZONE

The Fisheries & Wildlife Division programs on Kingman include:

- Invasive plant management and habitat restoration on all of Heritage Island and parts of Kingman Island;
- Weekly bird surveys that have been performed nearly continuously since 2002;
- Installation and monitoring of swallow nest boxes and osprey platform;
- Reptile and amphibian surveys using cover boards;
- Amphibian egg mass surveys in vernal pools;
- Queen snake and crayfish surveys;
- Bat surveys using mist nest and acoustic monitors; and
- Frog Watch training events and volunteer surveys.

At the same time, Anacostia Watershed Society (AWS), Living Classrooms, DOEE, and the National Park Service (NPS) are working on habitat restoration projects, (See Appendix B). AWS teams work to control populations of the invasive *Phragmites australis*, and revegetate the area with species such as Wild Rice (*Zizania aquatica*) and Arrow Arum (*Peltandra virginica*). In coordination with the NPS and DOEE, AWS engages numerous student volunteers in these ongoing efforts to restore nearly 8 acres of wetland and meadow habitats at the Islands (See Appendices C and D).

These efforts are important as more than 2,500 acres of tidal wetlands have been destroyed in the Anacostia River. Historically, Kingman marsh supported extensive areas of tidal freshwater emergent wetlands dominated by Wild Rice. These Wild Rice stands were famous in the region as a major Sora and Carolina Rail hunting destination at the turn of the 19th Century. Around that time, the River was subject to large efforts to dredge and fill its wetlands because they were considered malarial swamps. The dredging and straightening of the River's channel eliminated almost all the existing marshes, which were replaced with shallow water for boating and other recreational uses.

The River's tidal impoundments (i.e. Kenilworth and Kingman Lakes) rapidly filled with sediment as a result of the quick development happening in the urban watershed of the River.

This sedimentation process created expansive areas of intertidal mudflats. These mudflats were a common sight in the Anacostia River for more than 60 years until the implementation of wetland restoration projects at Kenilworth in 1993, Kingman Lake in 2000, and across the Anacostia River, near the River Terrace neighborhood, in 2003. These restoration projects converted large areas of mudflats to emergent marshland, which supports a diversity of wildlife species. Restoring wetland habitat along Kingman Island increases the River's capacity to filter sediment and nutrients like nitrogen and phosphorus. The restored ecosystems filter and absorb nutrients, sediment, and chemical contaminants; improve the River's hydrology by absorbing and retaining flood water and stormwater runoff; and reduce erosion by slowing water currents, anchoring bottom sediments and softening waves that break along the shoreline. These resources also provide critical habitat for hundreds of species of fish, birds, mammals, amphibians, reptiles, mussels, and other invertebrates; enhance the Anacostia

River's recreational value; and consolidate the River as an unmatched natural asset in the DC metropolitan region.

Additional existing conditions warrant care and consideration. According to the Soil Test, Geotechnical Human Health and Ecological Risk Reports, the Islands have contaminated soils which contain construction debris, metal rebar, heavy metals, and a petrochemical smell. One option for ameliorating these conditions is to remediate the contaminated soil. Remediation consists of removal and safe disposal of the soil. Further soil analysis and tests will need to be performed as a part of the larger RFK re-development.

Because of the soil contamination the design decision was made to limit the amount of disturbance to the site; leading to a "light touch" approach such that any built structures would have limited and shallow foundations and no below grade spaces.

Current educational and cultural events

At present, Living Classroom, the Anacostia Watershed Society, and DOEE run several programs which engage both DC school children and volunteers.

VOLUNTEER AND STUDENT EFFORTS ON KINGMAN AND HERITAGE ISLANDS IN 2016			
	EVENT TYPE	NUMBER OF VOLUNTEERS	TOTAL HOURS
CLEARING / RESTORATION	Invasive removal, tree & shrub planting	320	960
	Create picnic areas (invasive removal)	114	342
	Creating new trail (invasive removal)	30	90
	Trail clearing	54	216
	Wetland restoration	650	325
	Meadow restoration	380	190
CLEAN-UP	Trash clean-up and categorization	226	672
	Canoe clean-up	17	34
	Install pet waste stations	24	72
CONSTRUCTION	Picnic table constructing	101	404
	Boardwalk construction	61	258
EVENTS	Bluegrass Festival (zero waste, beer, bands, etc.)	490	1,960
TOTAL		2,467	5,523



Anacostia Watershed Society's programs focus on ecosystem restoration. For example, the Rice Rangers program engages students to grow wetland plants in their classroom. They then bring their plants on a field trip and transplant them along the Anacostia River. Between 750-1,000 students are engaged in this program per year (taking place in the spring). The planting dates are limited by the number of low tide days that occur during the weeks between mid-April and mid-

June. There are usually about 10 days that work each spring. Anacostia Watershed Society can accommodate a maximum of four classes per planting day (assume 25 students per class) which means 100 students per day, so a maximum of 1,000 students per year in this program.

The Saving Our Native Grasslands (SONG) program engages students in meadow restoration. Last fall, AWS engaged 375 students in this program, all second graders from District of Columbia Public Schools. Students learn about meadows and biodiversity through an AWS visit to their classroom. They then go on a field trip to Bladensburg Waterfront Park where they visit a restored meadow and collect meadow seeds. That is followed up with a pontoon boat trip on the Anacostia River. The conclusion of these introductory lessons is a visit to Kingman Island to build mason bee houses, and to plant those seeds—directly helping with the meadow restoration. These planting and bee house building sessions have 50-75 students per session.

AWS also hosts Wetland Work Days for volunteers from the general public. Planting takes place during the spring and fall while maintenance efforts that support restoration occur during the remainder of the year. These events accommodate between 10-100 people per session.



DOEE runs the Green Zone Environmental Program (GZEP) as part of Mayor Barry's Summer Youth Employment Programs. GZEP is aimed at introducing District youth aged 14-24 to the environmental field and to help foster environmental stewardship. For the past six years, between 30-50 students per year have worked with Living Classrooms on Kingman Island on a number of projects including trail clearing to make room for native habitat and to create a new trail and picnic areas, and weeding a rain garden.



Blue Grass Festival

Somewhat in contrast to the educational and restorative work cited above, once a year, the Blue Grass Festival comes to the Islands. This festival was developed to raise awareness of the Islands. In addition, the festival has been a fundraiser for the programs run on the Island. At this point, stakeholders such as DOEE, Living Classrooms and Anacostia Watershed Society are willing to explore re-locating this festival to bring awareness to other ecologically

sensitive areas in the District. This comes as habitat restoration efforts are producing tangible results. The festival—which brings thousands to the Island on a single day—has the potential to damage this restoration work.

Park management and operations

The Islands are owned by the District of Columbia with oversight by the Deputy Mayor's Office for Planning and Economic Development. Living Classrooms has the contract to manage the Island. The current operating budget for the Island is approximately \$137,000 a year. This covers one full time employee who is responsible for personally implementing security—opening and closing the Islands—as well as maintenance, access and communications about the Islands. The same staff person also coordinates all educational activities and oversees the Bluegrass Festival. The multiple duties assigned to the single Living Classroom staff person relates directly to issues of access and security as analyzed below.

Access

The location in the center of the city lends itself to remarkable access especially for a natural area. It is a wonderful resource and escape from the urban environment. The current main entrance—at the eastern edge of RFK Stadium parking lot—is very difficult to locate. This contributes to the underutilization of the park.

The combination of accessibility and deep vegetative cover provide a possible place of refuge for people experiencing homelessness, which is a benefit for them, but necessitates design and management issues for an education program.



The Islands can be accessed both by land and water. Access by land includes both vehicle and pedestrian access points. The pedestrian bridge on the west side is the preferred access point for field trips. The Benning Road entrance with vehicle access is used as a maintenance entrance.

Security

Security on the Islands is an issue that will require some attention. Currently, the Islands are secured by one caretaker in charge of opening the gates to the Islands every morning and sweeping the Islands at night before closing the gates. There are no additional security measures on the Islands (such as cameras, call stations, or well-lit pathways). In addition, the gate on Benning Road is ineffective at keeping persons off the Islands at night because one can easily enter underneath the Benning Road bridge. If the Islands are to be used for school children, a balance must be struck between open access to all people and the safety and security of the children. Ideally the educational area should be separated from the general public and people not involved in the educational programming, at least while field trips are in progress. This can be accomplished through signage and an on-line scheduling system.

Assuming access can be limited at the western pedestrian bridge, the other primary concern for ingress and egress is along the northern edge. Although there is a lockable gate at the north vehicle entrance, the pedestrian border along Benning Road is porous. This condition is of concern and is therefore addressed in the proposed design solutions.

There is an existing proposal to build a new dock on the north and east side of Kingman Island. (This project is being overseen by Living Classrooms.) If this dock will be open to the public, it would be logistically simpler to keep that space public at all times. A securable barrier east to west across Kingman Island somewhere south of the dock and north of the pedestrian bridge could provide a reasonably secure area for education below that barrier.

If restroom facilities are provided in the future, these facilities will meet District requirements and Office of Human Rights guidance for restrooms.

The Islands are officially open for day use only; continuation of that policy is recommended. Overnight camping programs are not recommended due to security concerns and lack of safe and secure washroom facilities.

Previous master plan documents

With the analysis of the current existing conditions underway, the team reviewed the available design documents from 2005 and beyond.

The original Master Plan developed by Lee and Associates delineates a series of paths and nodes, to include a Sculpture Area, a large open meadow adjacent to a playground and a Nature Center, (See Appendix E). The uses shown reflect the US Army Corps of Engineers Kingman and Heritage Islands Habitat and Passive Recreation Study completed in 2002. The Kingman Island Restoration Plan of 2015, also by Lee and Associates, shows a more elaborate plan of pathways and a space specifically designed for the 9/11 Memorial Grove. There are



walkways that project into the River to allow for viewing of the River. Canoe docks are shown in two locations, one beneath the South Capitol Street Bridge and one close to Benning Road. Of particular interest is the Outdoor Classroom which highlights the hydraulic ecosystem of the River. The siting for the 9/11 Memorial Grove is currently under review; its construction on Kingman Island is not certain, but to accommodate the possibility there is an area reserved where this could occur.

The 2005 Nature Center Design by Studios Architects sits at the edge of the Kingman Lake immediately to the south of the existing connecting bridge and adjacent to the meadow. The building plan has large program spaces for an exhibit hall, discovery room and multi-purpose rooms. The exterior articulation includes wooden sun shades along with a rooftop green nursery. The building projects into the water allowing for a direct connection to the River. This striking building creates a landmark destination, one which would draw visitors by its intriguing, elegant and engaging appearance. The firm also included a bird watching tower which sits in the landscape on the southern portion of the Island.

Concurrent to the planning for the Islands is the Events DC proposal to redevelop the RFK Stadium site. The initial plans were released in early April 2016 and updated in January 2017. The focal point of this re-development is a large building complex that includes a sports center and community market. It is sited on the East Capitol Street side of the stadium parcel. The portions of the site further to the north are slated to be community fields. Of note, the concept designs show several additional bridges being added to connect the Islands to both sides of the Anacostia River. The proposed bridges may interfere with the goal of creating an environmental, education focused oasis in the District. This grant team recognizes the need to update access to the Islands, and this report includes alternate recommendations.



PROPOSED PARK FEATURES

Introduction

This grant team came together to focus on the powerful benefits that outdoor learning can provide school children. Our approach is to take the expertise of Real School Gardens, Living Classrooms, and Anacostia Watershed Society combined with the design acumen Oehme Van Sweden Landscape Architects and Hickok Cole Architects, to create outdoor learning spaces. A series of classrooms, each centered on a different ecosystem generates a complete picture of the Anacostia's rich array of flora and fauna.

As part of their work to create learning gardens, Real School Gardens has studied and amassed data to support the transformative power of hands on “experiential” learning in an outdoor setting. Experiential learning is the process of learning through direct engagement and experience and studies have proven that outdoor education directly facilitates learning. It is more specifically defined as “learning through reflection on doing”. In addition, experiential learning is proven to increase academic achievement for all students. Studies show that when students are engaged in experiential lessons, they understand more complex material, are better able to solve problems, and apply that knowledge in new contexts. Moreover, experiential learning builds other essential skills, such as critical thinking, collaboration, creativity, and communication.

Analysis of programmatic needs

School Programs

When schools run field trips to the Islands it is most convenient to be able to accommodate a whole grade or team at once. The Islands should accommodate up to 150 school children on the property.

At the present time, there are no built amenities on the Islands. For the sake of the current educational programs, it would be convenient to have restrooms, along with some outside running water for washing off shoes and boots before the children get back on the bus. In addition, space for drying and storing boots would be useful near the wash off area. (Currently this task is done off-site in Bladensburg.) It would be useful to have storage for paddles and life jackets near the current dock. For the outdoor classrooms, an array of equipment requires

storage. For example, pens, paper, clipboards, and magnifying glasses could be placed in secure units under outdoor classroom seating.

A typical school field trip would break the larger group into smaller more intimate groups to explore the site. A variety of light impact ‘outdoor classrooms’ can provide learning stations in different habitats.

For example, if there are ten groups of 15 students, or five groups of 30 students, they can each rotate through pairs of activity or learning areas, each associated with a different habitat:

- ‘Woodland habitat’ stations—a clearing just big enough to be able to gather for discussion, possibly logs for seating;
- ‘Meadow habitat’ stations—seating along paths made of natural materials;
- ‘Vernal pool habitat’ stations—a path or walkway to access the bog without disturbing it;
- ‘Marsh habitat’ stations—projecting docks to be able to access the marsh for exploration; and
- ‘River habitat’ stations—a walkway or floating dock to access the river, pull up minnow or crab traps, pull a net, or check turbidity of water.

A dock for motorized boats (planned under separate development) on the east side in navigable waters and a floating dock for canoe or kayak access on the west side in protected waters will provide opportunities for additional exploration and activities. Access to the dock for self-propelled boats should have easy access for carrying canoes and kayaks, for example a ramp or stair in a straight line with no tight turns. These are just examples; the learning stations should reflect the unique opportunities of the site.

Further discussions with both teachers and the groups who currently run trips will be helpful in fleshing out specific program needs.

Accessibility Requirements

One issue that must be addressed is that not all portions of the existing park are ADA accessible. First and foremost, there must be a fully accessible route through the park and especially to the classrooms. All students and residents who want to explore the Islands must be able to do so. In the case of the route from the shore via bridges to Heritage and then Kingman Island, this experience captures the powerful sense of leaving the urban setting and entering into the quiet sanctuary of the Islands. It is the most compelling way to become acquainted with the park and it must be available to all.

The proposed design features—from entry building to bridges to floating classroom to elevated forest walk—are all designed to meet accessibility requirements.

Design Philosophy

The Islands, as an urban oasis, have the potential to be an environmental landmark, setting an example of ecological regeneration for other cities. In order to do this, there must be a commitment to both the short term and long terms goals. The immediate and pressing aim is to strengthen the existing educational programs and continue the efforts to reclaim the Islands from disrepair and neglect. This goal aligns with the original purpose of the Islands, namely, to serve District children. It also builds momentum for the ambitious, long term goal of building a state-of-the-art Living Building Challenge Certified Environmental Center.

The near-term goal is intended to be a cost effective and pragmatic response to the delayed progress of maximizing the potential of the Islands. The long-term goal is to construct a sustainable, living building that can accommodate groups of people indoors and can boast of having equipment—such as microscopes— for a class of school children. In other words, creating the Kingman and Heritage Islands Environmental Center provides opportunities to:

- Educate this generation of District children about science;
- Serve the neighborhood as a meeting place;
- Act as a resource center for non-profits working on the Anacostia; and
- Exemplify the District’s Leadership Role in the realm of sustainability by designing and certifying the project under the Living Building Challenge.

What is the Living Building Challenge (LBC)?

The LBC is the most rigorous green building rating system in the world. Requirements include:

- Net Positive Energy
- Net Positive Water
- Usage of materials free of harmful chemicals
- Implementation of biophilic design principals
- Equitable and accessible design
- Built-in education features

This long term goal envisions a role for the Islands beyond the park created there.

As part of the analysis, the team will employ a holistic approach to the design resulting in one that not only remediates contamination and restores ecosystem function but that is regenerative, meaning that once these strategies are set in motion, the site will be sustainable and integrated long-term. As was mentioned previously, the cost to remediate the toxic soils would be a burden to any construction budget. For this reason, only small, above ground structures are proposed for the Islands themselves. Similarly, the creation of specific indigenous ecosystems is being done on top of the dredged soil and deposited trash. Thus, there is a new environmental datum being created where, a century ago, there had been river. The efforts of all those involved pushes toward the regeneration and transformation of an existing compromised landscape into a healthy one. Such an effort can serve to teach the lessons of

moving beyond a polluted past and to a more ecologically sustainable future.

In the pages that follow, the team presents a series of elements that will be constructed in the first round of funding. These are the Kingman Island Ranger Station, several Outdoor Classrooms, a Pavilion for the Gateway Meadow, a landing in the Wetland Classroom, and accessible routes and pathways. The Anacostia River Environmental Center at Kingman and Heritage Islands, a Living Building Challenge Certified building, follows and is also described in words and images; it would be built at a later date as the culmination of the development of the Islands.

Following the design and programmatic information for the proposed features are the construction cost estimates and operational budgets.

KINGMAN & HERITAGE ISLANDS

PROPOSED PLAN

Aerial View



Kingman Island Ranger Station & Park Access

The Kingman Island Ranger Station will serve as the interim gateway to the park. The building addresses current programmatic needs for the Islands, namely: an office for park staff, restrooms for visitors, and storage for maintenance equipment and educational supplies. It welcomes visitors into the park by acting as an identifiable entry point. Finally, this places a park ranger in the position of better monitoring visitors coming and going from the park.

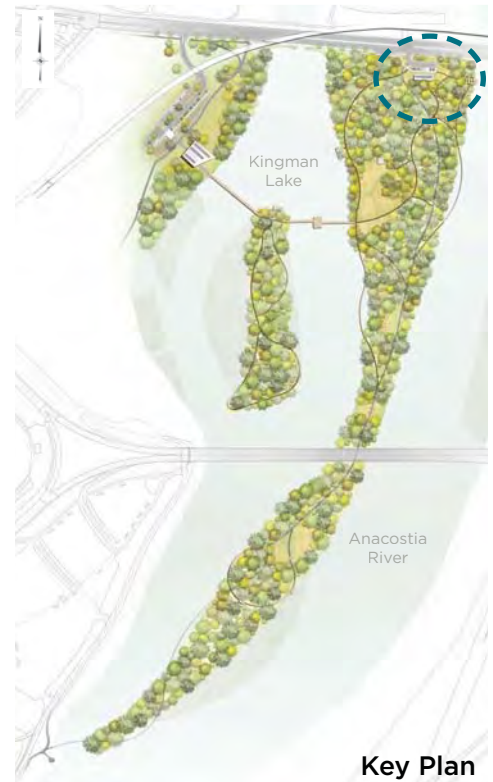
As one of the most visible man-made elements on the Island, the design of The Ranger Station balances being recognizable to Benning road traffic with being deferential to the landscape surrounding it. Constructed of materials and textures that are compatible with its natural surroundings, The Ranger Station will usher visitors through an open air breezeway towards expansive views of Kingman Island.

The aesthetic of The Ranger Station takes cues from vernacular buildings such as traditional park structures and reinterprets that architectural language into a striking and contemporary version, (See Appendix F). The crisp linear profile of the building sets it apart from the lush, low grasses planted in front of it. A covered porch runs the entire length of the southern face of the building and acts as threshold to visitors who are either entering or leaving the park. It also provides protection from the elements for school groups.

The Ranger Station is meant to greatly improve the visitor experience by providing park information such as the history of the Islands, the habitat regeneration work, and a map with the park features identified. This gateway structure will augment the current educational programming by making the routine tasks associated with field trips much easier. For example, boots will be cleaned up on site rather than remotely; supplies will be readily at hand, stored for use in the outdoor classrooms; and students will be able to wash up and use a restroom prior to boarding the bus back to school. In addition, stormwater management interventions utilized on the site will be used for educational purposes, (See Appendix G).

Park maintenance will also be made easier. Staff will have access to ample, secure storage for equipment, immediately adjacent to their office.

Upon completion of The Anacostia River Environmental Center at Kingman and Heritage Islands, The Ranger Station will continue to function as a support facility for park maintenance staff and a secondary facility for visitors.





Example Images



A. Ornamental Entry Gate



B. Restored Meadow Grasses



C. Accessible Path



D. Grass Pavers



E. Interpretive Signage



F. Park Signage



G. Bike Racks

KINGMAN ISLAND RANGER STATION & PARK ACCESS

BUILDING PLAN & IMAGERY

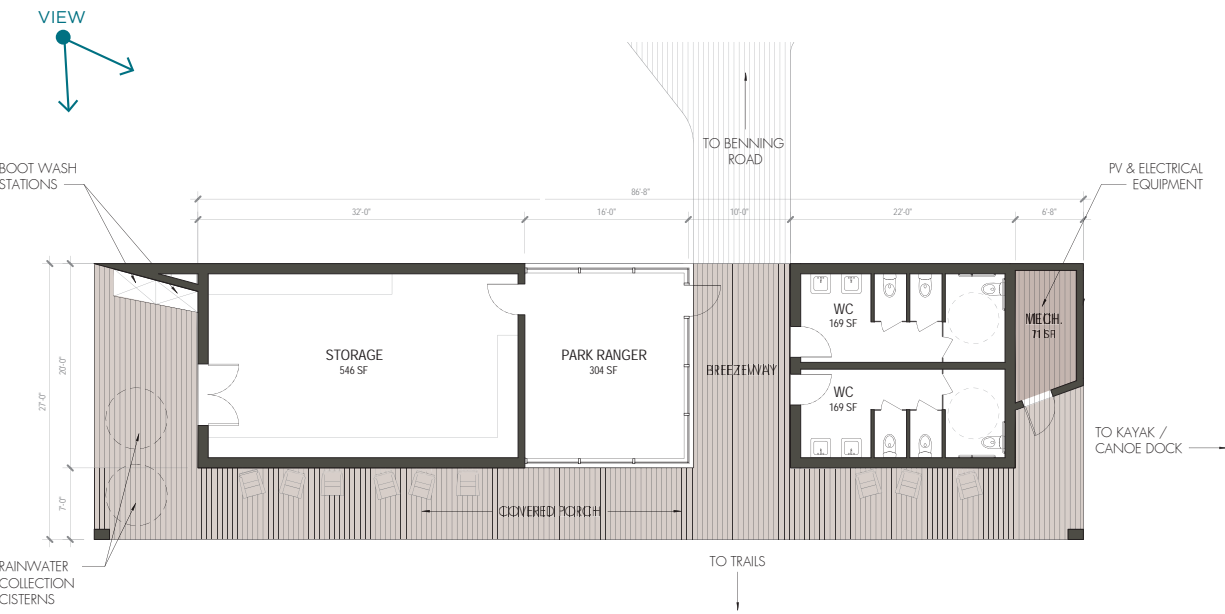
Key Plan



Perspective View



Enlarged Building Plan



Precedent Images



Glass / Wood house by Kengo Kuma



High Meadow Cabins



Zecc Architecten and Roel van Norel.

Marsh Landing

Wetland Classroom

The Marsh Landing Classroom is located at the northern edge of Heritage Island, at the meeting point between the bridges that connect Heritage Island to the mainland and to Kingman Island.

This classroom sits adjacent to the wetlands that run along the western edge of Heritage Island and in between the two bridges that connect the Islands to the existing RFK Stadium Parking Lot. It is already the site used by Living Classrooms and AWS to facilitate their many wetland restoration programs.

In this proposed design, the area on Heritage Island which sits between the two existing bridges is being greatly improved to function more effectively. A platform will be constructed to physically connect the two bridges; this removes the existing change in elevation which makes this location inaccessible. From this platform there are constructed walkways that lead to the river's edge and an additional, broader platform. This platform has wide steps attached. These have a dual purpose: they facilitate teaching and contain integrated storage beneath. Students can sit, amphitheater style, while AWS staff are introducing them to their wetland restoration project. Those same steps hold the very waders and other equipment used to carry out their work. Having the equipment more readily available, frees up AWS time to focus on their work, rather than the logistics of having equipment delivered for daily use. This classroom will also have a handwashing station to clean equipment and wash hands in close proximity to the point of activity. Water could be delivered via a supply pipe that can travel along the underside of the bridge from the mainland to the Island. This connection comes from existing infrastructure and would reduce cost by keeping it largely above grade.

Working tables are also part of this classroom; these would be used in the following ways:

1. As a work space to lay out seeds and vegetation that will be planted by students as a part of their educational programming.
2. As a spot to rest or picnic for citizens exploring the Islands on the weekends.

Finally, there would be a small floating platform which allows students to get closer to the water – providing a space to learn about the wetlands up close. Because this location is the primary spot for AWS to host their educational activities, other educational features will also have a large impact. For example, the inclusion of message boards, posted tide charts, and



interactive, large-scale water thermometers will inspire curiosity and learning, even if AWS is not present. This provides environmental education for citizens at all times.

From an academic perspective, marshes and wetlands provide a vast number of environmental benefits that the students will be able to see and study. These benefits include: erosion control, aquatic and wildlife habitat, endangered species habitat, flood control, and filtering pollutants. Donning waders, students can collect data regarding marsh ecosystems and also plant new wetland and marsh plants to help restore this vital ecosystem. Students can also study tides, aquatic life, fish migrations, weather, and water quality. This classroom space will also provide a great location for language arts lessons, which may include observation, comprehension, and composition.



Students and teachers from Anacostia High School working to restore wetlands along Heritage Island

MARSH LANDING (NORTH HERITAGE ISLAND) - WETLAND CLASSROOM

SITE PLAN & IMAGERY

Key Plan

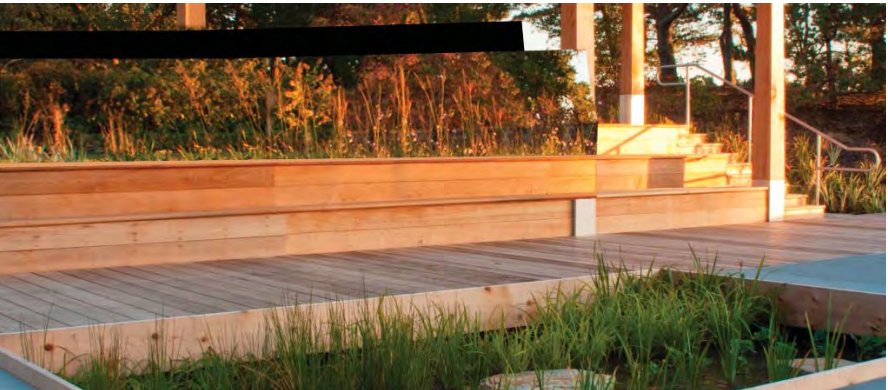


- Boat dock
- Overhead shade structure
- Ramp to dock to assure ADA access onto the dock
- Proposed raised boardwalk to connect bridges linking Heritage and Kingman Islands while creating ADA accessibility
- Ramp down to Heritage Island Trail

Example Images



A. Accessible Boardwalk to Connect Bridges



B. Tiered Seating for Classes & Classroom Storage



C. Lean-to railing with interpretive wetland signage



D. Handwashing Station

Gateway Meadow

Classroom, Pavilion, & FLOAT

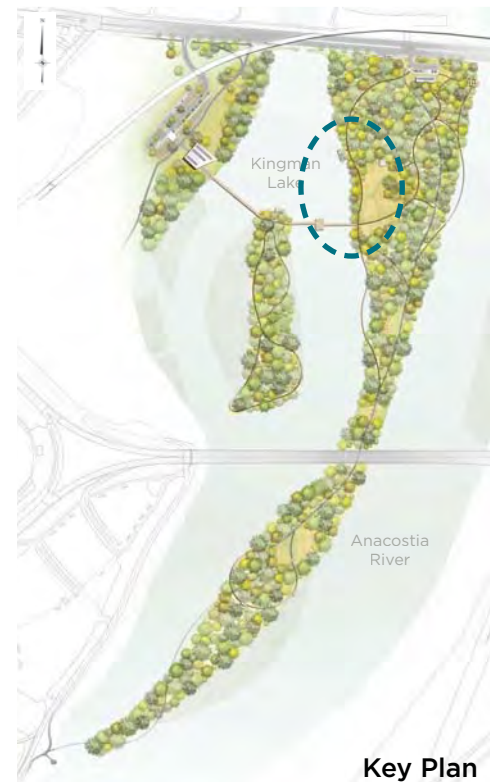
The Gateway Meadow is currently the largest open space on the Islands and has one of the richest ecosystems. For this reason, it has the capacity to serve both as a classroom and as an inviting space for a variety of uses. Due to the fact that it is highly visible from the mainland, it has the potential to draw people onto Kingman Island. To maximize the Meadow's appeal, a pavilion is proposed at its edge. For the new visitor, the pavilion becomes a destination. Once there, they will be in a position to discover more of the park.

Living Classrooms has been restoring the meadow habitat for many years. The removal of asphalt pavement, the containment of trash heaps, and the planting and restoration of native plant species have all contributed to the regeneration of this vibrant ecosystem. To assist with the restoration and growth of vegetative plants and grasses, a rainwater harvesting tank is proposed to provide irrigation capabilities during the hot summer months. It will be equipped with solar panels to power the pumps which propel the water to the plants.

Educational opportunities for all grade levels abound in the Gateway Meadow Classroom. Meadow ecosystems—with native grasses and wildflowers—serve a vital role in the entire park ecosystem. This is due to their ability to attract and support pollinators including bees, butterflies, moths, and native beetles. Students and teachers alike can use the meadow classroom across the entire curriculum. The wildflowers and grasses that inhabit the meadow will be a focal point for pollinator education, plant biology and dissection, data collection, and creative writing. In addition, the open space associated with the meadow will provide opportunity to study weather patterns and solar and lunar position. Plant identification, bird identification, and soil studies are also excellent lessons for this classroom space.

Key educational features will be provided to inform park visitors about the Meadow. Informational plant signage, a solar powered weather station, and message boards will enhance the experience of coming to Kingman Island.

The Gateway Meadow is also the main gathering point of the Kingman Island Bluegrass and Folk Festival — an event that brings thousands of people to the Islands. While it might seem as if such foot traffic would be detrimental to the vegetative plant growth in the Meadow the reverse is true. The rhizomatic growth is not negatively impacted during that time (late spring) and as it mimics bison stampedes which help seeds make contact with the soil. There are, however, other areas that might inadvertently and negatively be trampled due to the large crowds.



GATEWAY MEADOW - CLASSROOM, PAVILION, & FLOAT

SITE PLAN & IMAGERY

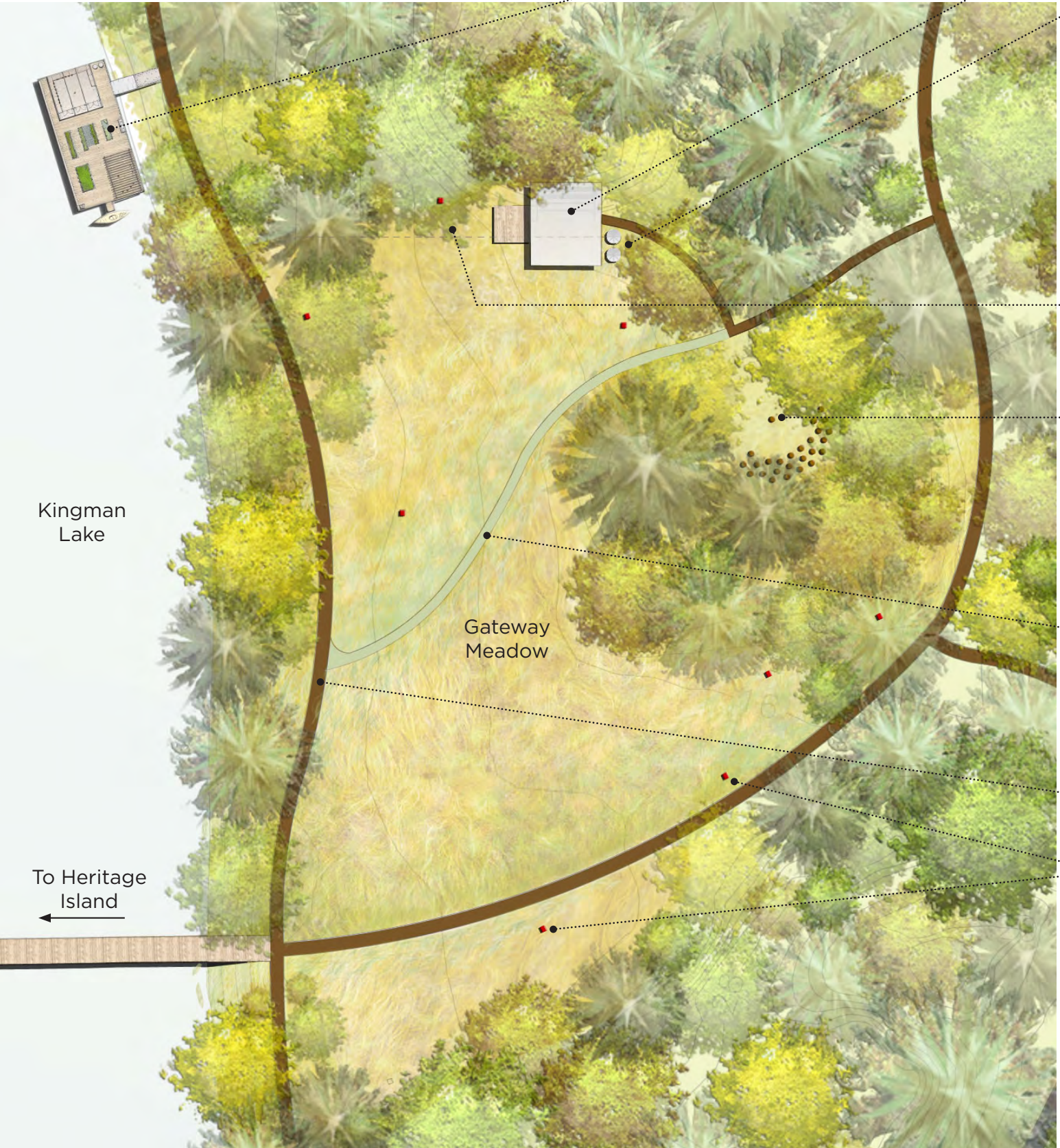
Key Plan



Existing Aerial Plan



Enlarged Site Plan



F.L.O.A.T. (Floating Lab on Anacostia Tributary)

Pavilion - shade structure with seating for 25 people

Cisterns to capture water off of building and pump water from Kingman Lake to water the meadow



Underground waterline for water for water to be pumped from Kingman Lake to Cisterns for meadow maintenance

Log seating for a class of 25 students



Grass mown path



ADA Accessible path

Birdhouses located in different microclimates

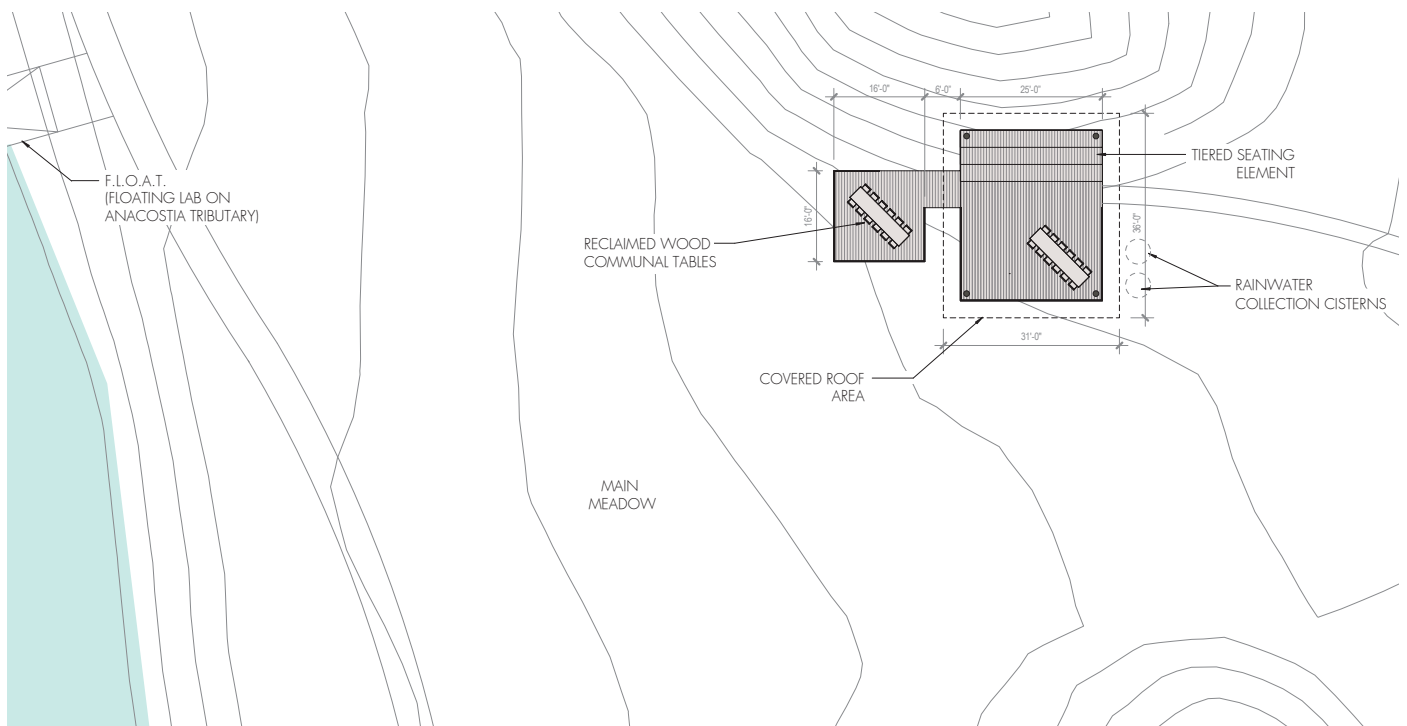


Pavilion

The meadow, which is inherently open and unobstructed, lacks a place to sit or to get out of the sun during hot days. To address this, a pavilion set along the edges of the meadow is proposed. It will serve both educational programs and recreational visitors.

The pavilion will house furniture for seating for small groups and picnic tables for approximately 25 people. Durable, lightweight, moveable furniture has been installed successfully in the public realm of cities such as New York, Boston, and here in the Georgetown neighborhood of DC. In addition to the furniture, a tiered seating element is incorporated into the pavilion. This allows the pavilion to adapt to different uses. From educational programs to impromptu movie screenings, live music performances, birthday parties – the Meadow Pavilion accommodates a diverse set of users in a natural setting. This is rarely found in the District and makes this proposed amenity a true asset.

Enlarged Site Plan



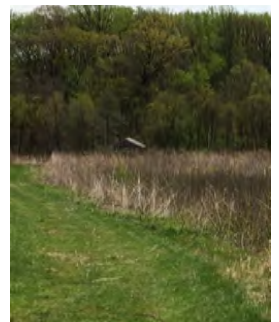
Precedents



Play Cubed, Outdoor Classrooms



Wolf Trap Little Meadow Pavillion



Longwood Gardens

Floating Lab on Anacostia Tributary (FLOAT)

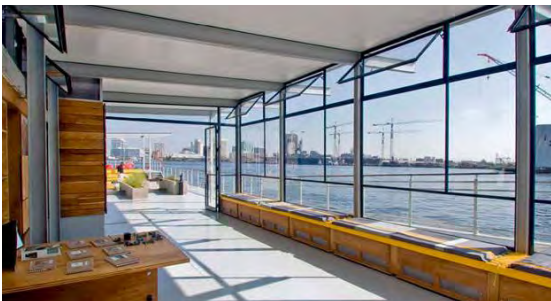
The Islands offer an important connection to the Anacostia River – a body of water that should be celebrated, discussed, and restored. Providing a direct connection to the water enhances a student’s ability to understand the river’s ecosystems and habitats. The Floating Lab on an Anacostia Tributary (FLOAT) is a unique classroom that provides for such an opportunity. It can hold approximately 50 students. It will be anchored in place and be ADA accessible. The dock will have seating with a shade structure. The installation of message/cork boards, a solar powered weather station, water monitoring stations, a tide chart, and plant signage on FLOAT will all assist in providing education to both students and park visitors. Similar concepts have been built in other natural environments, such as the on the banks of Lake Michigan as part of the Chicago Botanical Garden and on the Elizabeth River as part of the Learning Barge at the University of Virginia.

The Floating Lab makes close interaction with marsh and river ecosystems possible while the students still have two feet planted firmly on the ground. As with all outdoor educational experiences, the floating lab offers the potential to teach across the curriculum. Students will study tides, currents, and water data (turbidity, temperature, pH, etc.) along with wetland plants, aquatic wildlife, and weather. The floating lab will also introduce our students to some of this generation’s biggest challenges: stormwater runoff and water quality. The students can brainstorm and study the ways that engineers, biologists, and other professionals are trying to address these issues.





Example Images



A. Enclosed Classroom



B. Overhead Trellis



C. Weather Station



D. Educational Wetland Planters



E. Lean-to Railing



F. Handwashing Station

Secondary Classrooms

Along the path from the Gateway Meadow to the south end of Kingman Island, there are two spaces which could be turned into smaller, informal classrooms. They are the Understory Classroom and the Area of Repose

Understory Classroom

This is an opening in the landscape that is currently under utilized. There is an existing concrete pathway and pad that are surrounded by haphazardly placed boulders. The shape, size, and layout of the existing elements hinders rather than facilitates use of this space. This area nevertheless has the potential to augment the understanding of how a woodland forest ecosystem functions. This clearing is surrounded by tall trees below which there is secondary set of lower or understory trees and vegetation. This shade-tolerant shorter undergrowth showcase yet another type of habitat on the Islands.

Area of Repose

Similar to the Understory Classroom, this area is a clearing in the trees and outfitted with a concrete path. This area of Kingman Island is the narrowest. As a result, simultaneous views to Kingman Lake and the Anacostia are possible. With the removal of low brush and invasive species, view sheds can be opened which will heighten the experience of being on the Island.

Of particular interest is the view to the east which includes a trash trap – an installation by the District to reduce the amount of trash and debris in the Anacostia River. This can be seen in the winter months when the wetland vegetation is low. By making it more visible to visitors, this functional piece of infrastructure becomes a learning opportunity. To further enhance this classroom, the existing concrete path should be removed and seating provided. This will expand its usefulness by making it a place to take a break from hiking along the trails.



Understory Classroom - Enlarged Site Plan



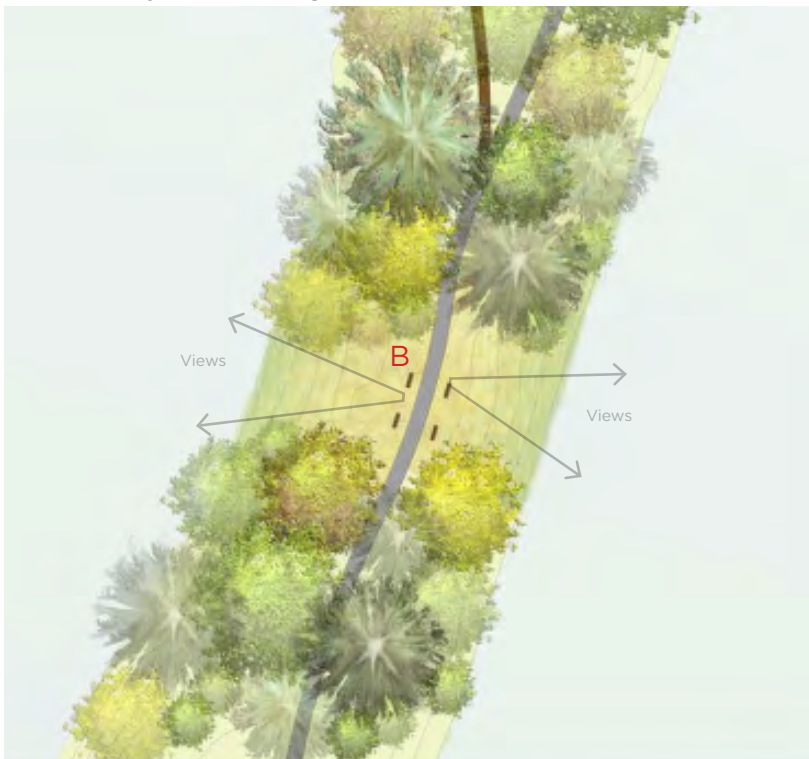
Aerial View - Existing Space

- The existing concrete path and boulders should be removed
- Classroom seating made from natural elements
- ADA Accessible pathway
- Views east taking advantage of the natural topography



A. Seating along pathway

Area of Repose - Enlarged Site Plan



Aerial View - Existing Space

- The existing concrete path should be removed
- Seating should be provided along the pathway
- Removal of low brush to open up viewsheds



B. Seating along pathway with open views

Eagle's Outlook

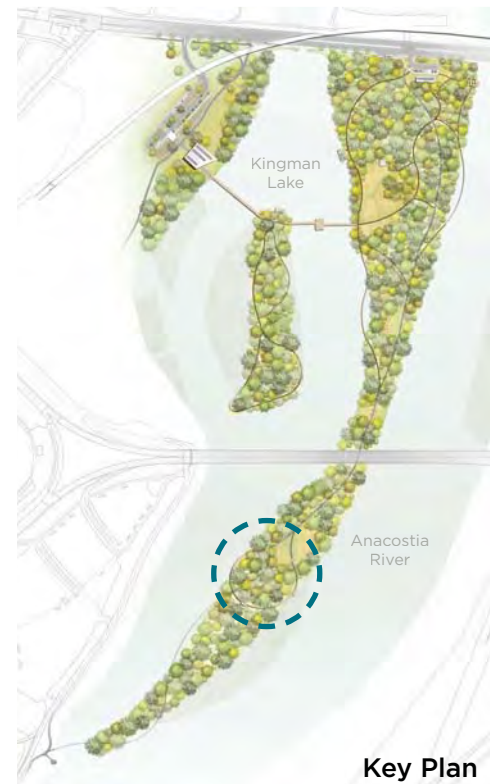
Woodland Classroom

The Woodland Classroom sits in an existing meadow tucked within a lush tree perimeter. It is a quiet area located in one of the widest parts of Kingman Island. It is also the terminus for the trails on the Island. Some of the oldest, and largest, trees on both of the Islands are located on this part of Kingman Island and they provide habitat for large birds of prey.

Eagle's Outlook (the Woodland Classroom) provides endless educational opportunities for all grade levels and adults alike. A woodland ecosystem is one of the most diverse, providing opportunities to study native vs. invasive species, trees and tree biology, and forest wildlife. Students will be able to identify predator/prey relationships, collect and identify insects, discover and explore wildlife habitat, and collect and experiment with decomposing materials. A gathering area with a whiteboard and seating will provide a classroom space to discuss topics, materials, and findings. In addition, the woodland classroom provides an excellent area to incorporate visual arts and language arts into outdoor education. The woodland provides many natural materials for visual art projects – students can sculpt and create entirely with natural elements (sticks, clay, rocks, etc) which can simply be left behind.

Canopy Walk

The meadow clearing allows for direct views of the tree tops. To increase the connectivity of users with the woodland forest this proposal includes a canopy walk – an accessible boardwalk that gradually ramps up to bring users up into the trees for a truly immersive experience. The Canopy Walk wends its way in and out of the forested area, providing glimpses of other ecosystems – the small meadow, the wetlands, vernal pools – while ascending into the tree tops. One can imagine children running up the gradual incline and pausing and pointing at what they see. In this location, it could be a bald eagle or an osprey soaring above, it might just as well be a blue heron or a stunning white egret patiently peering into the river, trying to catch its lunch. The Canopy Walk is intended to be a place that stirs wonder and engagement with the environment of Kingman Island and the Anacostia River. Where once there had been the intent to build an amusement park, there now is the goal of turning the experience of being in nature into the most engrossing form of entertainment.



Perspective View

Kingman
Lake

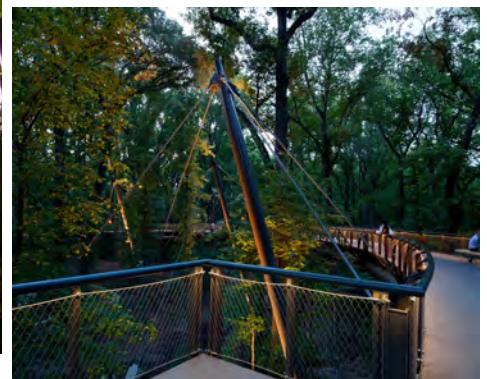
Anacostia
River



Precedent

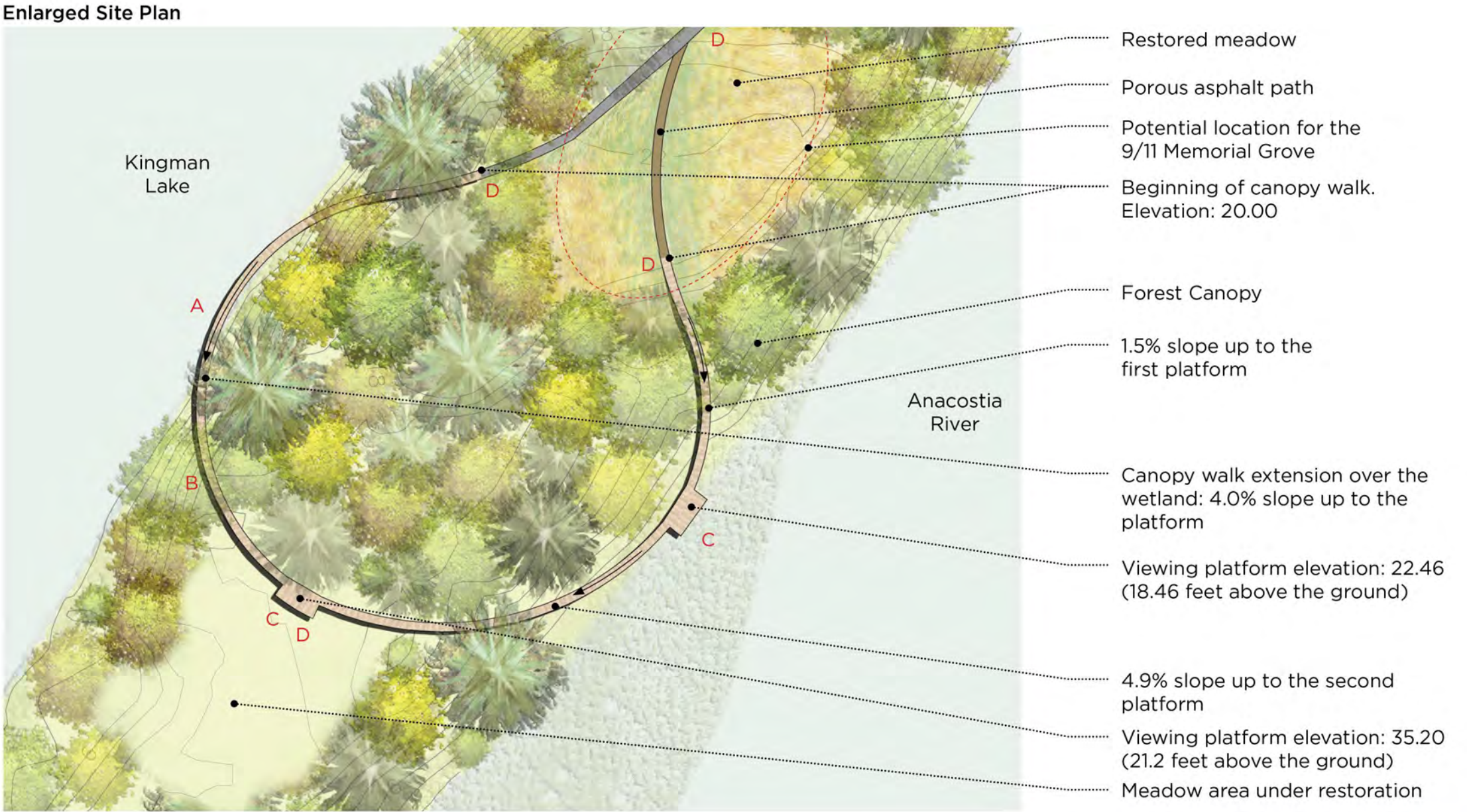


Kendeda Walk, Atlanta Botanical Garden



EAGLE'S OUTLOOK (WOODLAND CLASSROOM) & CANOPY WALK

SITE PLAN & IMAGERY



Example Images



A. Boardwalk over Wetlands



B. Canopy Walk



C. Viewing Platform



D. Wildlife & Foliage Identification Signage

Anacostia River Environmental Center at Kingman & Heritage Islands

The final and most powerful program element for the Islands Park is the creation of a world class education facility. This Environmental Center—an eco-lab and gateway building—introduces visitors to the park as well as to the wonders and history of the Anacostia River and its watershed. The building will also highlight the District’s tremendous efforts to be a model for sustainable cities around the world.

The location—in the northeast corner of the RFK Stadium parcel—was carefully selected. As previously discussed, putting a structure on the Islands themselves would be too ecologically difficult due to the issue of soil remediation and is counter to the idea of the interventions having a ‘light touch.’ Using area on the Islands for a building would limit the capacity of the outdoor classrooms, compromising the goal of serving as many District school children as possible. An on-island location would limit the visibility and access to the Environmental Center. Finally, this placement of the Environmental Center creates a gateway to the park with expansive views of the wetlands, large meadow and bridges.

There are additional reasons for this proposed location for the Environmental Center. It allows for convenient access to the Anacostia River trail, Benning Road Streetcar, and Stadium Armory Metro station. This will encourage visitors to bike or utilize transit to get there. In addition, the proximity to the upcoming RFK Stadium redevelopment will encourage larger numbers of visitors to the park. The redevelopment plans show open area where the Environmental Center will sit. Thus, it will not disrupt any of the programmatic uses featured in that plan.

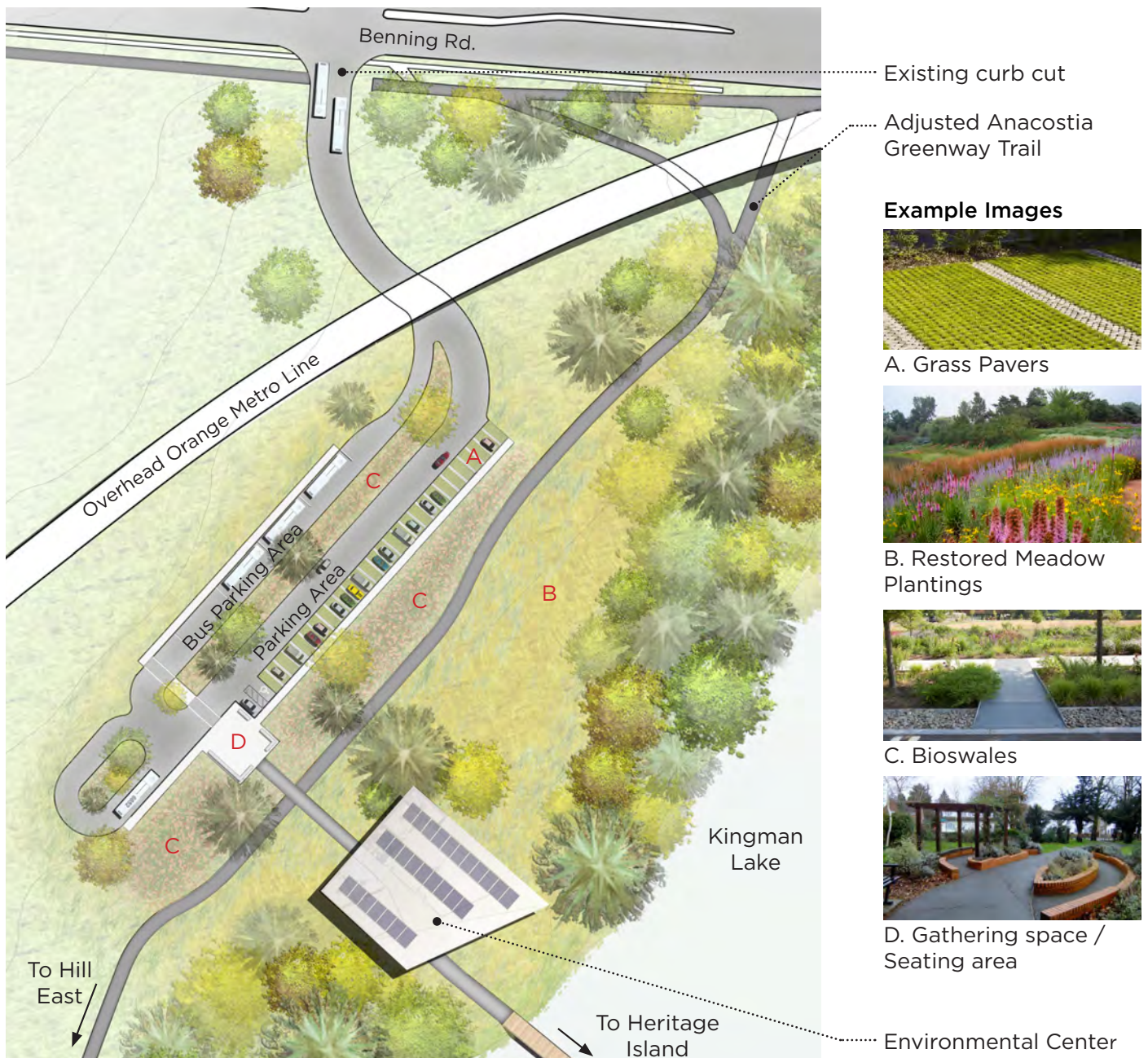
Like The Ranger Station on Kingman Island, the aesthetic of the environmental center will be rectilinear and contemporary in order to contrast with the organic appearance of the landscape, (See Appendix F). As currently envisioned, the building will consist of a pair of separated, trapezoidal pavilions, joined by a roof structure. The building literally creates a covered threshold that visitors will pass through. Clad in highly renewable and durable materials and featuring solar panels placed on sloped roofs, the building will be a visually enticing landmark. A large public terrace is proposed for the park side of the building. This area provides opportunities to linger and enjoy views of the park or host gatherings for both educational and private events. Maintaining visual linkage between the public spaces of the gateway building and the park beyond is a design priority: it ensures that the reason for the Environmental Center’s existence is the focal point of the architecture.



The layout of the Environmental Center features a large, divisible, multi-purpose room that can function as an exhibit space, media lab, lecture hall, or as private event space, one which could accommodate uses such as corporate retreats. While the building must first serve District residents, it must also function in as budget neutral a way as possible. For this reason, the layout is meant to accommodate rental of the multi-purpose room.

The Environmental Center should be constructed to meet Living Building Challenge certification. Doing so will provide a priceless precedent for others to follow. It will showcase the District's ability to commission a world class building with minimal impact to the environment.

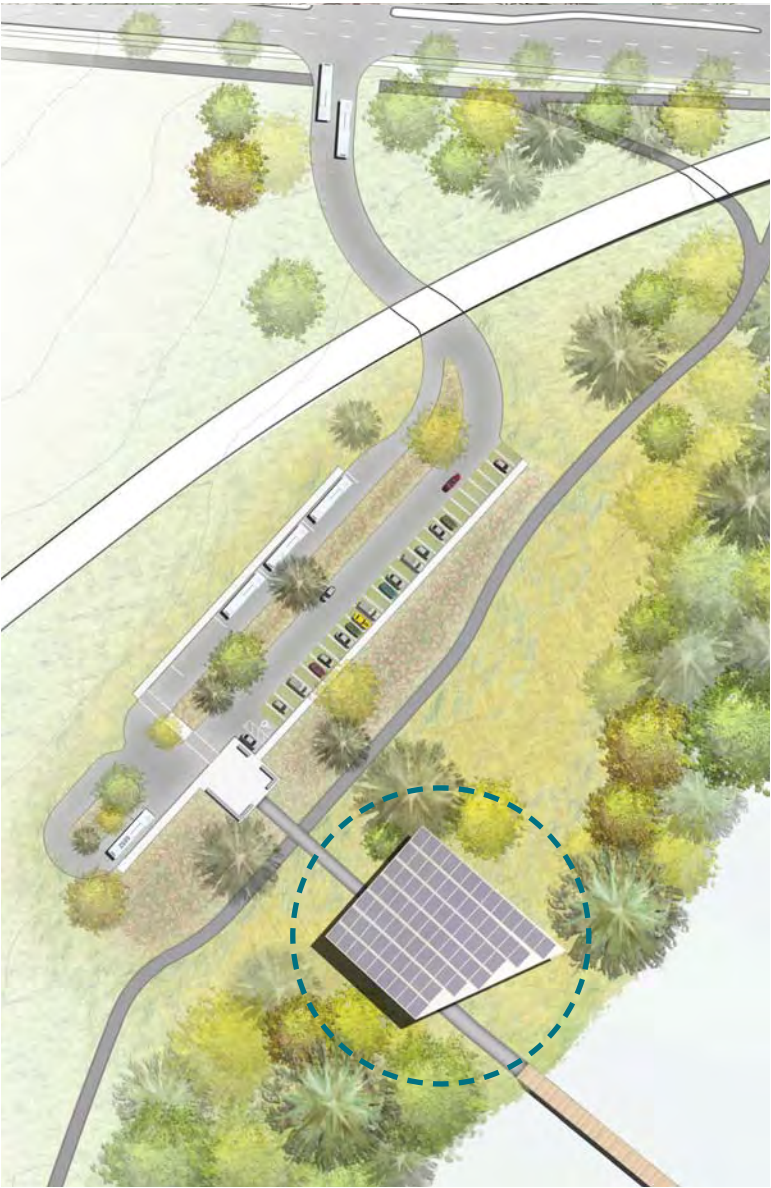
Enlarged Site Plan



ANACOSTIA RIVER ENV. CENTER AT KINGMAN & HERITAGE ISLANDS

SITE PLAN & IMAGERY

Key Plan



Enlarged Building Plan



Precedent Images



Horai Onsen Bath House, Kengo Kuma



Omega Center for Sustainable Living, BNIM



High Meadow Cabins, Fallingwater Institute



