



Appendix K

**Ecological Site
Assessment Checklist**

Checklist for Ecological Assessment/Sampling

I. SITE DESCRIPTION

1. Site Name: Benning Road Facility
Location: 3400 Benning Road, NE
Washington, DC 20019
County: _____ City: _____ State: _____
2. Latitude: 38 degrees 53'54.97" N Longitude: 76 degrees 57'43.23" W
3. What is the approximate area of the site? The Waterside Investigation Area is approximately 40 acres.
4. Is this the first site visit? yes no If no, attach trip report of previous site visit(s), if available.
Date(s) of previous site visit(s): November 5-8 and November 11-15, 2013.
A summary of wildlife observations made on the dates above are presented in Attachment 1.
5. Please attach to the checklist USGS topographic map(s) of the site, if available.
See Figure 1 for a USGS topographic map of the site.
6. Are aerial or other site photographs available? yes no If yes, please attach any available photo(s) to the site map at the conclusion of this section.
Aerial photos of the Waterside Investigation Area are presented on Figure 2. The Landside Investigation Area is also depicted on this figure; however, the focus of this Ecological Site Assessment is on the Waterside Area.

7. The land use on the site is:
(i.e., the Landside Investigation Area)

____ % Urban

____ % Rural

____ % Residential

100 % Industrial (light heavy)

____ % Agricultural

(Crops: _____)

____ % Recreational

(Describe; note if it is a park, etc.)

____ % Undisturbed

____ % Other

The area surrounding the site is:*

1 mile radius (of the Waterside Investigation Area.)

50 % Urban

____ % Rural

____ % Residential

35 % Industrial (light heavy)

____ % Agricultural

(Crops: _____)

15 % Recreational

(Describe; note if it is a park, etc.)

National Arboretum,
River Terrace National Park, Anacostia Park,
Kingman Island, Langston Golf Course

____ % Undisturbed

____ % Other

*Note that the percentages were estimated from Google Earth aerial photographs.

8. Has any movement of soil taken place at the site? yes no. If yes, please identify the most likely cause of this disturbance:

____ Agricultural Use

X Heavy Equipment

____ Mining

____ Natural Events

____ Erosion

____ Other

Please describe:

The power plant buildings and structures including the generating station and former cooling towers were demolished and removed in 2014 and early 2015. Soil has likely been disturbed related to this activity. In addition, the removal of the cooling tower basins and adjacent PCB-impacted soils was completed in May 2017. All activities have been issued permits by DDOE and DCRA (Dept of Consumer Regulatory Affairs).

9. Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site, e.g., Federal and State parks, National and State monuments, wetlands, prairie potholes? *Remember, flood plains and wetlands are not always obvious; do not answer "no" without confirming information.*

Two patches of Anacostia River Restored Fringe Wetlands are present on the eastern shoreline (on right looking upstream): one at the southern end of the Site and one just north of the Benning Road Bridge. Anacostia Park, operated by the National Park Service, is located just north of the Site. The Anacostia Riverwalk Trail borders the southern end of the Site along the eastern shoreline.

Please provide the source(s) of information used to identify these sensitive areas, and indicate their general location on the site map.

The two wetland areas (labeled "Emergent Wetlands") and parks and trails are illustrated on Figure 2 .

10. What type of facility is located at the site?

Chemical Manufacturing Mixing Waste disposal

The Benning Service Center involves activities related to construction, operation and

Other (specify) maintenance of Pepco's electric power transmission and distribution system serving the Washington, DC area.

11. What are the suspected contaminants of concern at the site? If known, what are the maximum concentration levels?

The suspected contaminants of concern at the Site include polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and metals. Refer to Section 4 of the RI for a complete list of the suspected contaminants and maximum concentration levels.

12. Check any potential routes of off-site migration of contaminants observed at the site: Routes of migration to the Waterside Investigation Area.

Swales Depressions Drainage ditches

Runoff Windblown particulates Vehicular traffic

Other (specify) Outfalls 101 and 013

13. If known, what is the approximate depth to the water table? The depth to the water table varies with tidal fluctuations but on average is approximately 15 ft.

14. Is the direction of surface runoff apparent from site observations? yes no If yes, to which of the following does the surface runoff discharge? Indicate all that apply.

Surface water Groundwater Sewer Collection impoundment

Outfalls 101 and 013

15. Is there a navigable waterbody or tributary to a navigable waterbody? yes no

The Waterside Investigation Area is on the Anacostia River.

16. Is there a waterbody anywhere on or in the vicinity of the site? If yes, also complete Section III: Aquatic Habitat Checklist -- Non-Flowing Systems and/or Section IV: Aquatic Habitat Checklist -- Flowing Systems.

yes (approx. distance 200-400 ft) no

This is the approximate distance from the Landside Investigation Area to the Waterside Investigation Area on the Anacostia River.

17. Is there evidence of flooding? yes no *Wetlands and flood plains are not always obvious; do not answer "no" without confirming information.* If yes, complete Section V: Wetland Habitat Checklist.

There is some evidence of minor flooding along the shoreline of the Waterside Investigation Area, including watermarks and debris in shoreline vegetation.

18. If a field guide was used to aid any of the identifications, please provide a reference. Also, estimate the time spent identifying fauna. [Use a blank sheet if additional space is needed for text.]

The Cornell Lab of Ornithology online bird guide (<http://www.allaboutbirds.org/guide>) was consulted for the identification of scientific names for birds observed.

The site visit was conducted in about 2 hours. Birds were observed during this time and identified upon observation.

19. Are any threatened and/or endangered species (plant or animal) known to inhabit the area of the site? yes no
If yes, you are required to verify this information with the U.S. Fish and Wildlife Service. If species' identities are known, please list them next.

Letters requesting information on the presence of threatened and/or endangered species present at the Site were submitted to the DC Department of Environment, US Fish and Wildlife Service, and NOAA NMFS.

20. Record weather conditions at the time this checklist was prepared:

DATE: December 17, 2014

50 F Temperature (°C/°F)

45 F Normal daily high temperature

SE 14 mph Wind (direction/speed)

None Precipitation (rain, snow)

None Cloud cover

IA. SUMMARY OF OBSERVATIONS AND SITE SETTING

The Waterside Investigation Area was viewed from several locations along the eastern shoreline (on right side looking upstream). The western shoreline is located within a golf course and the river shoreline did not appear to be easily accessible. Several photos of both shorelines were taken during the site visit. The majority of photos were taken on at the southern end of the site where the Benning Bridge provided a viewpoint of both shorelines looking upstream and downstream.

Starting at the southern end of the Waterside Investigation Area, two patches of emergent wetland vegetation (approximately 2,000 and 10,000 square feet in area) were observed along the eastern shoreline. A sign on the shoreline indicated that these patches are part of the Anacostia River Fringe Wetlands Restoration. The dominant vegetation of these patches are *Phragmites australis* and *Typha* sp. Both wetlands had sheet pile bulkhead surrounding the areas with some opening for surface water movement between the wetlands and the river. This site visit occurred during low tide and several mudflat areas were exposed throughout the river and long the eastern shoreline. Wetland areas and mudflats are presented in attached photos.

Most of the eastern shoreline were stabilized with either sheet pile or rockwall. Riparian vegetation consisted of large trees and shrubs, which occurred dense in some areas and sparse in other areas. Tree species included maple, oak, and sycamore. The bank slope ranged from gradual to shallow slope to the river edge. The western shoreline was observed to be uniformly stabilized with a continuous rock wall with dense tree cover throughout. The bank appeared steeply sloped in some areas.

A view of the river near Outfall 013 was obtained from the Solid Waste Transfer Station. Mudflats were exposed in this area along the eastern shoreline and some small patches of *Phragmites*. The shoreline was gradual in slope with little bank stabilization. The western shoreline was densely forested with a more steep shoreline.

Because the ecological risk assessment is only evaluating risks within the Waterside Investigation Area, this site assessment focused on this area. Therefore, the Terrestrial Checklist was not completed.

Completed by Maryann Welsch Affiliation AECOM

Additional Preparers _____

Site Manager Ravi Damera, AECOM

Date Dec. 17, 2014

IV. AQUATIC HABITAT CHECKLIST -- FLOWING SYSTEMS

Note: Aquatic systems are often associated with wetland habitats. Please refer to Section V, Wetland Habitat Checklist.

1. What type(s) of flowing water system(s) is (are) present at the site?

- | | | |
|---|---|-------------------------------------|
| <input checked="" type="checkbox"/> River | <input type="checkbox"/> Stream | <input type="checkbox"/> Creek |
| <input type="checkbox"/> Dry wash | <input type="checkbox"/> Arroyo | <input type="checkbox"/> Brook |
| <input type="checkbox"/> Artificially created (ditch, etc.) | <input type="checkbox"/> Intermittent Stream | <input type="checkbox"/> Channeling |
| | <input type="checkbox"/> Other (specify)_____ | |

2. If known, what is the name of the waterbody? Anacostia River

3. For natural systems, are there any indicators of physical alteration (e.g., channeling, debris, etc.)?
 yes no If yes, please describe indicators that were observed.

There is evidence of bank stabilization, channelization, and there is trash and debris in the river.

4. What is the general composition of the substrate? Check all that apply.

- | | | |
|---|---|--|
| <input type="checkbox"/> Bedrock | <input checked="" type="checkbox"/> Sand (coarse) | <input checked="" type="checkbox"/> Muck (fine/black) |
| <input type="checkbox"/> Boulder (>10 in.) | <input type="checkbox"/> Silt (fine) | <input checked="" type="checkbox"/> Debris |
| <input checked="" type="checkbox"/> Cobble (2.5-10 in.) | <input type="checkbox"/> Marl (shells) | <input checked="" type="checkbox"/> Detritus |
| <input type="checkbox"/> Gravel (0.1-2.5 in.) | <input checked="" type="checkbox"/> Clay (slick) | <input checked="" type="checkbox"/> Concrete |
| <input type="checkbox"/> Other (specify)_____ | | |

5. What is the condition of the bank (e.g., height, slope, extent of vegetative cover)?

On the east shoreline (looking upriver), the bank is stabilized with stone walls or sheet pile in many areas. However, there are some sections of the shoreline that are not stabilized, but shallow sloping to the river. The height of the bank above the river is approximately 5 feet on average. Trees and shrubs cover much of the shoreline, densely in some areas and sparsely in others. Overhanging vegetation is present. On the west shoreline, the bank was uniformly stabilized with a stone wall of approximately 4 feet in height, with dense tree cover and overhanging vegetation.

6. Is the system influenced by tides? yes no What information was used to make this determination?

The Lower Anacostia River is tidally influenced and has an exchange of approximately two to four feet. On Dec 17, 2014, the water level was at 0.4 ft relative to mean low low water (MLLW) and it was noted that it was low tide.

7. Is the flow intermittent? yes no If yes, please note the information that was used in making this determination.

8. Is there a discharge from the site to the waterbody? yes no If yes, please describe the discharge and its path.

There are two outfalls that discharge to the Anacostia River: outfalls 101 and 013 (Figure 2).

9. Is there a discharge from the waterbody? yes no If yes, and the information is available, please identify what the waterbody discharges to and whether the discharge is on site or off site.

No discharges from the waterbody were apparent on Dec. 17, 2014; however, evidence of flooding were apparent along the shoreline, including debris in shoreline vegetation and watermarks.

Because the Anacostia is tidally influenced, it appears groundwater can discharge to the site from the river during periods of low tides, based on data collected from monitoring wells in the Landside Investigation Area.

10. Identify any field measurements and observations of water quality that were made. For those parameters for which data were collected, provide the measurement and the units of measure in the appropriate space below:

- _____ Width (ft.)
- _____ Depth (ft.)
- _____ Velocity (specify units): _____
- _____ Temperature (depth of the water at which the reading was taken _____)
- _____ pH
- _____ Dissolved oxygen
- _____ Salinity
- _____ Turbidity (clear, slightly turbid, turbid, opaque)
(Secchi disk depth _____)
- _____ Other (specify) _____

The above water quality parameters were measured *in situ* at the ten locations where surface water samples for chemical analyses were collected. Please see Table 1 for a summary of these water quality observations.

11. Describe observed color and area of coloration.

The surface water of the Anacostia River appeared blue-brown and slightly turbid in areas. Some standing water within the wetland areas was observed, likely stranded during the low tide, and appeared to be brownish with a metallic sheen on the top in some areas.

12. Is any aquatic vegetation present? yes no If yes, please identify the type of vegetation present, if known.

Emergent

Submergent

Floating

13. Mark the flowing water system on the attached site map.

The Anacostia River is labeled on Figures 1 and 2.

14. What observations were made at the waterbody regarding the presence and/or absence of benthic macroinvertebrates, fish, birds, mammals, etc.?

Several bird species were observed on the water and on mudflats in the river including:

- Mallards (*Anas platyrhynchos*)
- Species of gulls (*Laridae* family)
- Canada Geese (*Branta canadensis*)
- Belted kingfisher (*Megaceryle alcyon*)

The kingfisher was observed on a nest platform adjacent to one of the wetland areas.

It was noted that a full list of birds present in the District of Columbia is published by Maryland / District of Columbia Records Committee of the Maryland Ornithological Society, which is available at: <http://www.mdbirds.org/mddcrc/pdf/dclist.pdf>.

V. WETLAND HABITAT CHECKLIST

1. Based on observations and/or available information, are designated or known wetlands definitely present at the site?
 yes no

Please note the sources of observations and information used (e.g., USGS Topographic Maps, National Wetland Inventory, Federal or State Agency, etc.) to make this determination.

Two large patches of emergent vegetation were observed along the eastern shoreline of the Waterside Investigation Area. See attached photos for examples of this vegetation. The areas are part of the Anacostia River Fringe Wetlands that were restored along the shoreline of this section of the river by the USACE and DDOE on land owned by NPS (DDOE 2009 [see citation at foot of this page]).

2. Based on the location of the site (e.g., along a waterbody, in a floodplain) and site conditions (e.g., standing water; dark, wet soils; mud cracks; debris line; water marks), are wetland habitats suspected?
 yes no If yes, proceed with the remainder of the wetland habitat identification checklist.

3. What type(s) of vegetation are present in the wetland?

- Submergent Emergent
 Scrub/Shrub Wooded
 Other (specify) _____

4. Provide a general description of the vegetation present in and around the wetland (height, color, etc.). Provide a photograph of the known or suspected wetlands, if available.

The dominant species of emergent wetland vegetation present are *Phragmites australis* and *Typha* sp.

5. Is standing water present? yes no If yes, is this water: Fresh Brackish
What is the approximate area of the water (sq. ft.)? _____

Please complete questions 4, 11, 12 in Checklist III - Aquatic Habitat -- Non-Flowing Systems.

Standing water was observed near the shoreline within the emergent wetlands and is likely river water that is stranded at low tide. The area of standing water varied with location and likely varies with tidal height. The area of standing water observed for this assessment ranged from 10 to 25 square feet. It was noted that the water would not be standing in these areas during high tide. Therefore, these areas are not considered to be true non-flowing systems.

6. Is there evidence of flooding at the site? What observations were noted?
 Buttressing Water marks Mud cracks
 Debris line Other (describe below)

In the restored wetland areas, watermarks and debris lines were apparent on the vegetation present.

7. If known, what is the source of the water in the wetland?

- Stream/River/Creek/Lake/Pond Groundwater
 Flooding Surface Runoff

The Anacostia River is the source of water to the wetlands.

8. Is there a discharge from the site to a known or suspected wetland? yes no If yes, please describe.

9. Is there a discharge from the wetland? yes no. If yes, to what waterbody is discharge released?

- Surface Stream/River Groundwater Lake/Pond Marine

Surface water moves between the Anacostia River and the wetlands and the direction of water movement depends on the tidal height.

10. If a soil sample was collected, describe the appearance of the soil in the wetland area. Circle or write in the best response. A soil sample was not collected in the wetland area.

Color (blue/gray, brown, black, mottled) _____

Water content (dry, wet, saturated/unsaturated) _____

11. Mark the observed wetland area(s) on the attached site map.

The approximate boundaries of the wetland areas are presented on Figure 2.

Table 1
 Surface Water Quality Field Parameter Summary
 Ecological Risk Assessment
 Benning Road Remedial Investigation

Field Parameter	Units	Minimum	Mean	Maximum
CONDUCTIVITY	ms/cm	0.198	0.23	0.263
DISSOLVED OXYGEN	mg/l	3.35	3.656	3.97
OXIDATION-REDUCTION POTENTIAL	mV	7.6	55.05	98.6
pH	--	6.52	6.728	6.93
SALINITY	ppt	0.09	0.11	0.13
TEMPERATURE	deg F	65.62	67.233	68.2
TURBIDITY	NTU	0	10.97	24.9

Notes:

deg F - Degrees Fahrenheit.

mg/L - Milligrams per liter.

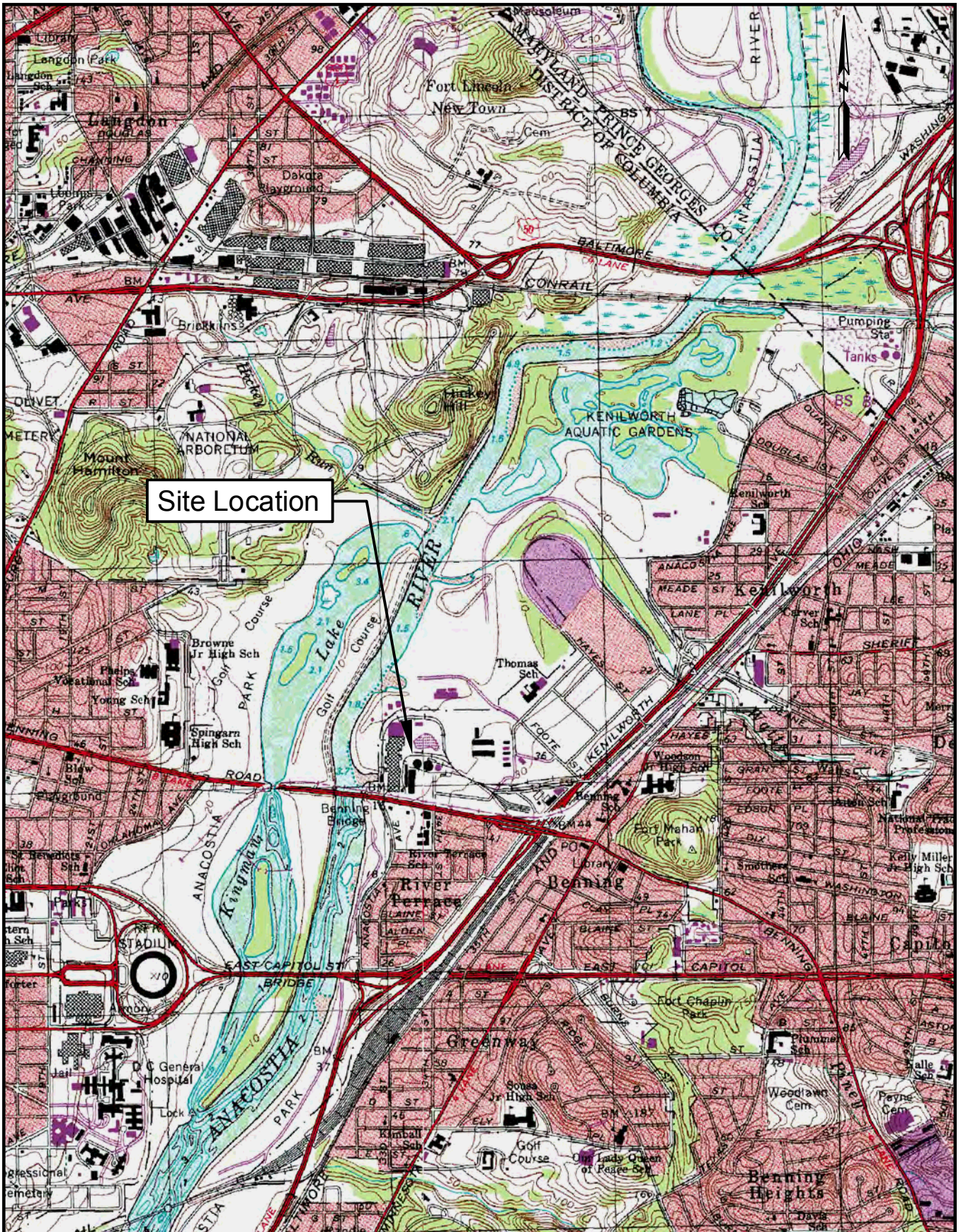
mS/cm - Microsiemens per centimeter.

mV - Millivolts.

NTU - Nephelometric Turbidity Units.

ppt - Parts per trillion.

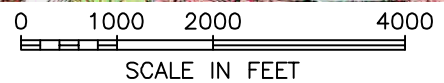
Field parameters were measured at the ten sample locations in the Waterside Investigation Area where surface water was collected for chemical analyses.



Site Location



Source:
USGS 7.5 Minute Topographic Map
Washington East Quadrangle



Benning Road Facility RI/FS Project
3400 Benning Rd., NE
Washington, DC 20019

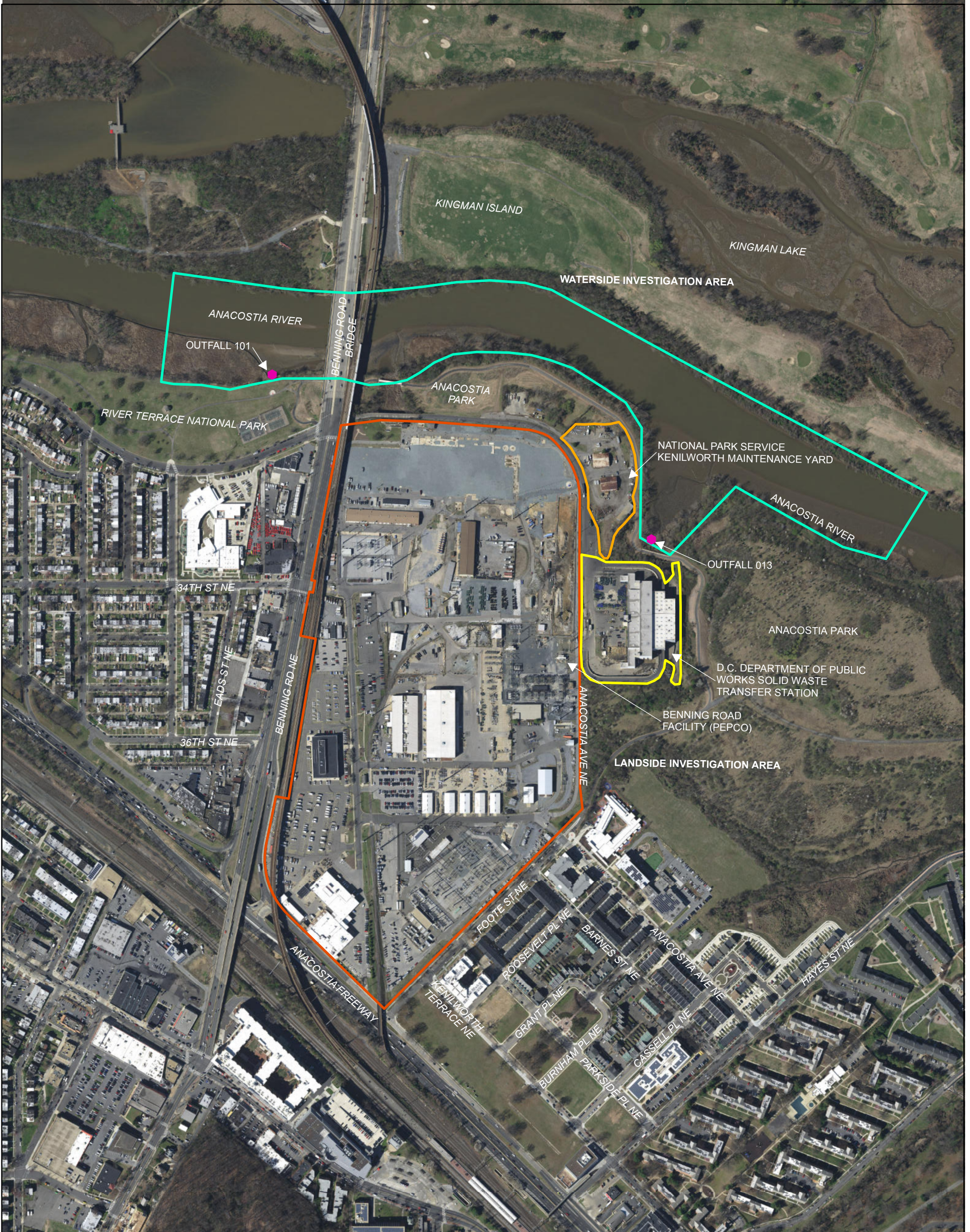
Site Location Map

DATE: 07/09/2012

DRAWN BY: LAD

CHECKED BY: RD

FIGURE 1



LEGEND

- Outfalls
- National Park Service Kenilworth Maintenance Yard
- D.C. Department of Public Works Solid Waste Transfer Station
- Waterside Investigation Area
- Benning Road Facility Property Boundary

AECOM



BENNING ROAD FACILITY RI/FS PROJECT
3400 BENNING RD., NE
WASHINGTON, DC 20019

SITE PLAN AND
INVESTIGATION AREAS

Date: 10/18/2018

Drawn By: KNS

Checked By: SED

FIGURE 2



Photo 1. The Anacostia River Fringe Wetland Restoration sign on the Anacostia Riverwalk Trail.



Photo 2. Emergent wetland vegetation in the restored Fringe wetland on the eastern shoreline.



Photo 3. The shoreline along the Anacostia Riverwalk Trail.



Photo 4. Sheet pile surrounding the Fringe wetland on the eastern shoreline.



Photo 5. Standing water observed in the emergent wetland vegetation on eastern shoreline.



Photo 6. A view of the river from the Benning Bridge looking south (downstream). A large mudflat is in the foreground and the restored Fringe Wetland is in the background.



Photo 7. Several aquatic birds were observed including gulls, ducks, and geese.



Photo 8. A large mudflat under the Benning Bridge, looking north (upstream).



Photo 9. A smaller patch of restored Fringe Wetland on the eastern shoreline looking north from the Benning Bridge.



Photo 10. The steep western shoreline with dense tree cover viewed from the Benning Bridge.



Photo 11. The mudflat at Outfall 013.

Attachment 1

Wildlife Observations

Pepco – Benning Road Waterside Investigation Area November 5-8, 11-15, 2013

Bird species observed:

- Throughout entire investigation at multiple locations
 - Canada geese (*Branta canadensis*)
 - Mallard ducks (*Anas platyrhynchos*)
 - Seagulls (*Laridae* sp.)
 - Blue herons (*Ardea herodias*)
 - Cormorants (*Phalacrocorax auritus*)
- Only during first week
 - Single bald eagle (*Haliaeetus leucocephalus*) (near National Arboretum)
 - Bufflehead ducks (*Bucephala albeola*) (northern half of area between landing and dock)
 - Single white heron or egret (*Ardea* sp.) (near bridge by field base)

Aquatic species found in Ponar grabs:

- Freshwater bivalves (multiple locations throughout both weeks)
- Freshwater eel (elver), approximately 7" (first week, single location)

Deer:

Observed throughout both weeks. Three or four mature male sightings. Observed one instance of mating along mudflats, approximately halfway between marina and field base.