Supplemental Habitat Assessment Work Plan Hudson River PCBs Superfund Site

General Electric Company
Albany, New York

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1. Introduction

This *Supplemental Habitat Assessment Work Plan* (SHAWP) has been prepared on behalf of the General Electric Company (GE) and presents the approach and locations for collecting additional habitat assessment data to assist in the design of the remedy selected by the United States Environmental Protection Agency for the Hudson River PCBs Superfund Site (USEPA, 2002). This SHAWP builds upon the information, data, and models presented in the *Habitat Delineation Report* (HD Report) (BBL and Exponent, 2005a) and the *Habitat Assessment Report for Candidate Phase 1 Areas* (Phase 1 HA Report) (BBL and Exponent, 2005b), which GE has submitted to USEPA for review; and it supplements the investigations proposed in Section 6 of the Phase 1 HA Report. Specifically, this SHAWP presents the proposed locations for the remaining Phase 1 habitat assessment stations and the Phase 2 habitat assessment stations, as well as the protocols and locations for collection of data to support Habitat Suitability Index (HSI) models for fish and wildlife species (i.e., yellow perch, largemouth bass, smallmouth bass, bluegill, common shiner, belted kingfisher, great blue heron, wood duck, muskrat, mink, and snapping turtle). This SHAWP is not intended to reiterate all the data needs and proposed investigations presented in Section 6 of the Phase 1 HA Report for Phase 1 areas; however, it identifies the stations at which those data collection efforts, as well as habitat assessments in Phase 2 areas, will be conducted, and it presents the specific protocols for collecting data to support the HSI models described in the HD and Phase 1 HA Reports. Following collection and review of the 2005 data, GE will submit a proposal for 2006 sampling for any further field work needed to fill habitat data gaps. Additional data, to the extent they are needed to facilitate the development of FCI and HSI models and the habitat replacement and reconstruction designs, are described in Section 6 of the Phase 1 HA Report (BBL and Exponent 2005b). Any additional site-specific field data considered necessary to facilitate adaptive management of the habitat replacement and reconstruction program will be described in the *Adaptive Management Plan* to be included in the Final Design Reports.

As stated in the *Habitat Delineation and Assessment Work Plan* (HDA Work Plan) (Blasland, Bouck & Lee, Inc. [BBL], 2003a), the overall goal of the habitat replacement and reconstruction program is to replace the functions of the Upper Hudson River habitats that are affected by the dredging to within the range of functions found in similar physical settings in the Upper Hudson River, given the changes in river conditions that will result from remedy implementation or from other factors. The range of functions found in the Upper Hudson River is being assessed through measurement of certain specified habitat parameters both in areas that will be directly impacted by dredging and in those that will not. Based on these data, the specific parameters are being used as design criteria for the habitat replacement and reconstruction program.

As described in the *Remedial Design Work Plan* (RD Work Plan) (BBL, 2003b), following habitat delineation activities, habitat assessments were to be conducted separately for: 1) the areas that are candidates for Phase 1 of the dredging program (as identified in the RD Work Plan); and 2) the remaining dredge areas, to be covered by the *Phase 2 Dredge Area Delineation Report* (Phase 2 DAD Report). Due to the timing of the signing of the Administrative Order of Consent for Hudson River Remedial Design and Cost Recovery (RD AOC), effective August 18, 2003 (Index No. CERCLA-02-2003-2027) (USEPA/GE, 2003) and resulting seasonal constraints for habitat data collection, it was only possible to complete habitat assessments for a portion of the candidate Phase 1 areas in 2003. Habitat assessments were completed at six unconsolidated bottom, nine aquatic vegetation, 14 shoreline, and four riverine fringing wetland stations in 2003. A subset of those stations was reassessed in 2004. The results of the habitat assessments completed to date, including the station designation as a target or reference area, were reported in the Phase 1 HA Report (BBL and Exponent, 2005b).

In September 2004, GE submitted a report that identified the company's proposal for which of the candidate Phase 1 areas will be subject to Phase 1 of the dredging program (Quantitative Environmental Analysis, LLC [QEA], 2004a), and the USEPA approved that proposal in January 2005. In the Phase 1 HA Report, GE proposed to complete the habitat assessments in the remaining Phase 1 areas following USEPA approval of that report and the Phase 1 DAD Report (QEA, 2005). In addition, in that document, GE proposed to conduct the habitat assessment activities in Phase 2 areas following completion and USEPA approval of the Phase 2 DAD Report. GE stated that the specific assessment (target) and reference locations to be subject to these assessments in both the remaining Phase 1 areas and the Phase 2 areas would be proposed in a SHAWP. Subsequently, on March 30, 2005, the USEPA approved the Phase 1 DAD Report (QEA, 2005). However, the USEPA has not to date approved the Phase 1 HA Report. In addition, GE has not to date submitted the Phase 2 DAD Report. Nevertheless, in order to provide for the collection of habitat assessment data in the 2005 field season, GE has elected to submit this SHAWP to present the locations for all remaining Phase 1 habitat assessment stations and Phase 2 habitat assessment stations for USEPA review and approval so that they can be assessed during the 2005 field season if schedule permits depending on seasonal constraints.

The approach for selecting the station locations is described in Section 2 below. The station locations for the field sampling program (FSP) are shown on Figures 3 through 17. However, the locations of some of the remaining Phase 1 stations may need to be modified based on conditions encountered during field reconnaissance (e.g., if it is known that aquatic vegetation becomes present in a previously unvegetated area or disappears from a vegetated area, or to include reference and target stations representative of major plant communities) or due to changes in the specific areas identified for dredging as the design progresses from the

Phase 1 DAD Report to the *Intermediate Design Report*, and finally to the *Final Design Report*. Similarly, because the Phase 2 DAD Report has not been submitted to the USEPA for review, the locations and/or type of the Phase 2 habitat assessment stations may need to be modified subject to USEPA approval (e.g., a reference station may be changed to a target station) as information regarding areas to be dredged in Phase 2 becomes available and is refined during the remedial design. In addition, stations may need to be added or modified so that each SAV and riverine fringing wetland vegetative community targeted for dredging is represented or to account for especially sensitive or unique habitats that are targeted for dredging and not represented by existing stations (RD Work Plan p. 2-18 and p. 3-6; BBL, 2003b). This assumes that seasonal constraints associated with the habitat assessment measurements and the delivery schedules for the aforementioned reports would accommodate conducting habitat assessments at the modified station locations. Moreover, following submission and USEPA approval of the Phase 2 DAD Report, habitat assessment stations may need to be added, for assessment in the following year(s), to complete the habitat assessments in Phase 2 dredge areas and corresponding reference areas. Habitat assessment station locations are determined following field reconnaissance and are subject to USEPA approval.

As stated in the HDA Work Plan, in response to USEPA comments, GE agreed to collect data to complete HSI models for representative species in the Upper Hudson River study area. The species for which the HSI models will be completed are yellow perch, largemouth bass, smallmouth bass, bluegill, common shiner, belted kingfisher, great blue heron, wood duck, muskrat, mink, and snapping turtle. The sampling plan for collecting HSI-specific data is described below and sampling stations for the collection of HSI-specific data are shown on Figures 3 through 17. The same sampling stations will be used to collect both HSI and functional capacity index (FCI) data in the Hudson River project area. HSI models represent specific species under a broad range of conditions, while the aim of FCI models is to represent general fish and wildlife suitability using site-specific models.

In addition, the HD Report presented the results of GE's 2003 reconnaissance of certain off-site reference areas in the Upstream Upper Hudson (i.e., the Hudson River upstream of the project area) and the Lower Mohawk River, and it proposed to select certain locations within those areas as off-site reference stations. Specific locations for those off-site reference stations are tentatively identified on Figures 1, 2, 18, and 19 of this SHAWP (based on field notes from the 2003 reconnaissance), subject to modification based on field conditions at the time of sampling. The off-site reference areas will be used to evaluate the impacts (if any) of potential broad, watershed-wide or regional changes unrelated to the remediation project that may extend beyond the 40-mile project area, and to determine whether these changes have had an effect on habitat

replacement/reconstruction. Such an assessment is beyond the scope of the HSI models; therefore, HSI models will not be completed at the off-site reference stations.

2. Phase 1 and Phase 2 Habitat Assessment Stations

The total number of target sampling stations (in dredge areas) for each habitat type was identified in the HDA Work Plan based on the information known at that time about the potential extent of dredging and existing habitats. As stated in the HDA Work Plan, a total of 135[1] unconsolidated river bottom, 52 aquatic vegetation bed, 68 shoreline, and 10 riverine fringing wetland stations would be sampled, with an equal number of stations located in target and reference (non-dredge) areas for each habitat type. Specific sample locations are selected using a stratified random approach based on plant species composition, substrate and/or depth to describe characteristics within each stratum. In accordance with the HDA Work Plan, nine samples were collected from each unconsolidated river bottom, aquatic vegetation bed, and riverine fringing wetland station, and three transects were sampled within each shoreline station. In accordance with the HDA Work Plan, based on the data collected to date, the following three modifications will be made to the sample design. First, an additional nine samples will be collected at large wetlands (i.e., greater than 0.5 acre as most wetlands are predominantly small [less than 0.5 acres in size]; see HD Report page 2-2) and large aquatic vegetation beds (i.e., greater than 3 acres to avoid preferentially weighting smaller areas higher, since there is likely to be more variability over a larger area. These additional samples will provide the flexibility to evaluate variability in characteristics within an aquatic bed/wetland to assist in habitat reconstruction and achievement of attaining success criteria. Second, six additional riverine fringing wetland stations will be added to the program, one in River Section 1, two in River Section 2 and three in River Section 3. Third, the number of unconsolidated river bottom stations will be reduced to offset the increased sampling required by the two changes above. For the stations identified in Figures 3 through 17, there are 21 aquatic vegetation beds larger than 3.0 acres and nine riverine fringing wetland stations larger than 0.5 acre. The additional nine samples that will be collected at each of those stations, combined with the six new riverine fringing wetlands equates to a level of effort of adding 36 stations to the program. Therefore, the number of unconsolidated river bottom stations will be reduced by 36, for a total of 100 unconsolidated river bottom stations. Information from the habitat delineation and assessment work completed in 2003 was used to determine appropriate strata to target for habitat assessment stations. Specific habitat station locations were selected based on sediment type, overlying water depth, adjacent land use (e.g. forested areas, open fields), river position (e.g., inner meander, outer meander), and locations where dredging was expected to occur. This information was used to select stations to meet the following criteria:

[1] This number was increased to 136 in the Phase 1 HA Report to allow for an equal number of target and reference stations. The USEPA agreed to this number in its August 16, 2004 comments on an earlier version of the Phase 1 HA Report.

1. Characterize the habitat strata identified from the habitat delineation information;
2. Include an equivalent number of target stations and reference stations;
3. Allocate numbers of sample stations among river reaches (e.g., pools) in rough proportion to the relative areas of the habitat likely to be affected by dredging in each river section; and
4. Include approximately similar plant communities for vegetated habitats with major plant communities, so that those communities are represented in both target and reference stations (e.g., not all non-*Trapa* aquatic vegetation stations should be *Vallisneria*).

Using these criteria and the currently available information on the areas to be dredged, target station allocations were developed for each river reach and dredging phase (Table 1). The most recent Phase 1 dredge areas from the USEPA-approved Phase 1 DAD Report and the dredge area delineations that were in production as working drafts for the Phase 2 DAD Report were used to determine the locations for target and reference stations. In addition, information on the locations of sampling stations from other programs, such as the Baseline Monitoring Program (BMP) (QEA, 2004b) and resource agency sampling programs (e.g., New York State Department of Environmental Conservation [NYSDEC] et al., 2004), was used to co-locate habitat assessment stations with those from other programs when possible. An equal number of reference stations were also identified for each habitat type and for each sub-category within the broader habitat type (e.g., dominant plant community for shoreline, aquatic vegetative bed, and riverine fringing wetland; sediment type for unconsolidated river bottom). The numbers of reference and target stations are not equally apportioned among the three river sections due to the greater extent of dredging anticipated in River Sections 1 and 2 compared to River Section 3. As such, there are more target stations than reference stations in River Section 1 and more reference stations than target stations in River Sections 2 and 3. Ultimately, there will be an equal number of target and reference stations for each habitat type. The locations for the stations sampled in 2003 and the proposed locations for all remaining Phase 1 and Phase 2 habitat assessment stations are shown on Figures 3 through 17. Note that for those stations at which habitat assessments have been conducted, the quadrat or transect locations are shown on the figures.

Table 1 – Target Stations[1] for Each Habitat Type by River Section and Phase
Based on Percentage of Dredging Impacts in Each River Section[2]

River Section	UCB[3]	Aquatic Bed	Shoreline	Wetland
RS1				
Phase 1	17	7	9	1
Phase 2	18	9	12	2
Total RS1	35	16	21	3
RS2				
Phase 1	0	0	0	0
Phase 2	7	5	7	3
Total RS2	7	5	7	3
RS3				
Phase 1	0	0	0	0
Phase 2	8	5	6	2
Total RS3	8	5	6	2
Total Number of Target Stations	50	26	34	8

Notes:
1. For each habitat type and sub-habitat (i.e., dominant plant community) primary characteristics, an equal number of reference stations will be sampled in addition to the target stations (see Table 2).
2. Dredge area impacts were calculated based on the approved Phase 1 DAD Report (QEA, 2005) and working drafts of Phase 2 dredge areas in production. These numbers are subject to change until approval of the Phase 2 DAD report.
3. UCB – unconsolidated river bottom.

The approved Phase 1 DAD Report does not include any delineation of areas in River Sections 2 or 3. However, the Northumberland Dam area of River Section 2 was included in earlier versions of the Phase 1 DAD Report, and this earlier delineation of the Northumberland Dam area was used in selecting locations of the 2003 habitat assessment sampling stations. Therefore, some of the target stations sampled in 2003 as Phase 1 areas are now Phase 2 stations. Specifically, in 2003, habitat assessments were completed at six unconsolidated river bottom stations (five target and one reference), nine aquatic vegetation bed stations (nine target[2]), 14 shoreline stations (11 target and three reference), and four riverine fringing wetland stations (two target and two reference). Based on the USEPA-approved Phase 1 DAD Report, two unconsolidated river bottom stations (UCB-4 and UCB-5 in the Phase 1 HA Report), four aquatic vegetation bed stations (SAV-5, SAV-7, SAV-8 and SAV-9 in the Phase 1 HA Report), five shoreline stations (SHO-5, SH0-7, SHO-9, SHO-10 and SHO-11 in the Phase 1 HA Report), and two riverine fringing wetland stations (WET-2 and WET-4 in the Phase 1 HA Report) are no longer within Phase 1 areas and are now considered Phase 2 target stations. However, the designation as a target or reference station will be made following the approval of the Phase 2 DAD Report, and reported in the *Intermediate Design Report* or the *Final Design Report*.

[2] SAV-1 was initially designated as a reference station in the Phase 1 HA Report. Based on the USEPA approved Phase 1 DAD it now falls within a Phase 1 dredge area and has been redesignated as a target station. SAV-5 was initially designated as a reference station and has been redesignated as a Phase 2 target station.

At the time of the submittal of this SHAWP, based on the amount of planned dredging in Phase 1 areas, a total of 17 unconsolidated river bottom, seven aquatic vegetation bed, nine shoreline, and one riverine fringing wetland target stations will be assessed in the Phase 1 areas (Table 2). An equal number of reference stations for each habitat type will also be assessed to complete the Phase 1 habitat assessments. A total of 33 unconsolidated river bottom, 19 aquatic vegetation bed, 25 shoreline, and seven riverine fringing wetland target stations will be assessed in the Phase 2 areas, some of which have already been sampled (Table 2, Row d). An equal number of reference stations for each habitat type will also be assessed to complete the Phase 2 habitat assessments. The total number of target and reference stations that remain to be sampled for Phase 2 are shown in Table 2 (Row f). The site-specific characteristics for the assessment stations are listed in Table 3.

Table 2 – Target (T) and Reference (R) Stations Needed to Complete Phase 1 and Phase 2 Habitat Assessments

	UCB		Aquatic Bed		Shoreline		Wetland	
	T	R	T	R	T	R	T	R
a. Total Number of Stations[1]	50	50	26	26	34	34	8	8
b. Total Phase 1 Stations (see Table 1)	17	17	7	7	9	9	1	1
c. Stations Completed in 2003	6	0	9	0	11	3	2	2
d. 2003 Target Stations in Phase 2 Areas	2	0	4	0	5	1	2	0
e. Remaining Phase 1 Stations[2]	13	17	2	7	3	7	1	0
f. Remaining Phase 2 Stations[3]	31	33	15	19	20	24	5	6

Notes:
1. The total number of sampling stations for each habitat type was modified from the HDA Work Plan as described in Section 2.0 above.
2. Calculated as: row b – row c + row d
3. Calculated as: row a – row b – row d

The Phase 1 dredge areas presented in the USEPA-approved Phase 1 DAD Report are shown on Figures 3 and 4. The Phase 2 DAD Report has not been completed and, therefore, potential dredge areas for Phase 2 are not included on Figures 3 through 17. Until completion of the Phase 2 delineation and design reports, the specific locations of the Phase 2 target and reference stations are subject to change, as noted in Section 1 above. Additionally, if during subsequent field activities, a specific vegetative community (e.g., spadderdock) that should be sampled is identified within an area that will be dredged, but is not currently being sampled, a target station will be moved to that area. If a target station is moved to sample a specific vegetative community, a reference station will be moved to sample the same community in a nondredged area if one does not already exist. In general, floating aquatic vegetation, such as spadderdock, will be sampled when it occurs in the aquatic vegetation bed and riverine fringing wetland stations. If any additional sampling stations are needed based on the Phase 2 DAD Report, they will be included in the 2006 sampling effort (see Section 1).

Table 3 - Site-Specific Characteristics of Proposed Target (T) and Reference (R) Assessment Stations

Station ID	Habitat	Phase	Target (T) or Reference (R)	Sampled	Sediment Type	X Coordinate	Y Coordinate	Figure Label	River Section	Habitat Size (sq. ft.)	Vegetation	River Mile	Water Depth (ft.)	River Position	Adjacent Land Use
SAV-01T	SAV	1	T	YES	N/A	734066	1616590	SAV-01T	RS1	399103.3	Wildcelery	195	5.6	MC	N-Fii
SAV-02T	SAV	1	T	YES	Variable/Transitional	735063	1613970	SAV-02T	RS1	55311.7	Wildcelery	194	3.1	MC	N-Div
SAV-03T	SAV	1	T	YES	Variable/Transitional	736073	1615160	SAV-03T	RS1	37833.4	Wildcelery	194	4.0	SC	N-Div
SAV-04T	SAV	1	T	YES	Variable/Transitional	734051	1610540	SAV-04T	RS1	68112.3	Wildcelery	193	9.1	MC	N-Diii
SAV-06T	SAV	1	T	YES	Variable/Transitional	737607	1596060	SAV-06T	RS1	51615.8	Wildcelery	190	8.0	MC	M4-Fii
SAV-10R	SAV	1	R	NO	N/A	731635	1616750	SAV-10R	RS1	5735545.2	Wildcelery	195	NA	OM	
SAV-10T	SAV	1	T	NO	Fine Grained/Silty	732968	1609250	SAV-10T	RS1	176504.5	Non-TrapaSAV	193	5.1	MC	N-Div
SAV-11T	SAV	1	T	NO	Variable/Transitional	732280	1607390	SAV-11T	RS1	451913.2	Non-TrapaSAV	193	6.9	OM	M4-Gi
SAV-11R	SAV	1	R	NO	Variable/Transitional	734320	1616990	SAV-11R	RS1	86986.4	Non-TrapaSAV	195	5.9	SC	M4-Dv
SAV-12R	SAV	1	R	NO	Rocky	737512	1594450	SAV-12R	RS1	87558.5	Non-TrapaSAV	190	11.1	MC	M4-Dii
SAV-13R	SAV	1	R	NO	Variable/Transitional	735832	1590560	SAV-13R	RS1	177649.1	Non-TrapaSAV	189	11.3	OM	M4-Gi
SAV-14R	SAV	1	R	NO	Variable/Transitional	735707	1589480	SAV-14R	RS1	244851.3	Non-TrapaSAV	189	8.2	OM	N-Dii
SAV-15R	SAV	1	R	NO	Sandy	737789	1574836	SAV-15R	RS2	32557.8	Non-TrapaSAV	187	NA	SC	N-Dv
SAV-16R	SAV	1	R	NO	Fine Grained/Silty	734951	1582330	SAV-16R	RS2	41989.4	Non-TrapaSAV	187	NA	OM	N-Div
SAV-17R	SAV	2	R	NO	Sandy	737044	1575810	SAV-17R	RS2	210675.6	Non-TrapaSAV	186	6.3	IM	N-Ei
SAV-18R	SAV	2	R	NO	Variable/Transitional	737176	1573960	SAV-18R	RS2	562352.8	Non-TrapaSAV	185	8.0	MC	N-Eii
SAV-19R	SAV	2	R	NO	Fine Grained/Silty	734493	1569750	SAV-19R	RS2	167610.5	Non-TrapaSAV	184	2.9	OM	N-Div
SAV-20R	SAV	2	R	NO	Sandy	738814	1553070	SAV-20R	RS3	140244.8	Non-TrapaSAV	181	4.9	MC	N-Di
SAV-21R	SAV	2	R	NO	Variable/Transitional	737994	1552780	SAV-21R	RS3	1606310.0	Non-TrapaSAV	181	5.8	MC	N-Div
SHO-01R	SHORE	1	R	YES	N/A	733708	1616000	SHO-01R	RS1	NA		195	NA	MC	N-Div
SHO-01T	SHORE	1	T	YES	N/A	734632	1614910	SHO-01T	RS1	NA		194	NA	MC	N-Ei
SHO-02T	SHORE	1	T	YES	N/A	735560	1613840	SHO-02T	RS1	NA		194	NA	SC	N-Div
SHO-03T	SHORE	1	T	YES	N/A	736463	1613790	SHO-03T	RS1	NA		194	NA	MC	N-Dii
SHO-03R	SHORE	1	R	YES	N/A	734419	1567730	SHO-03R	RS2	NA		184	NA	OM	N-Div
SHO-04R	SHORE	1	R	NO	N/A	735466	1616240	SHO-04R	RS1	NA		194	NA	SC	N-Fii
SHO-04T	SHORE	1	T	YES	N/A	735931	1613070	SHO-04T	RS1	NA		194	NA	IM	N-Dii
SHO-05R	SHORE	1	R	NO	N/A	735271	1611450	SHO-05R	RS1	NA		193	NA	MC	N-Diii
SHO-06T	SHORE	1	T	YES	N/A	737489	1596900	SHO-06T	RS1	NA		190	NA	MC	N-Dii
SHO-06R	SHORE	1	R	NO	N/A	735602	1590050	SHO-06R	RS1	NA		189	NA	MC	N-Dii
SHO-07R	SHORE	1	R	NO	N/A	736460	1588830	SHO-07R	RS1	NA		189	NA	IM	N-Dii
SHO-08R	SHORE	1	R	NO	N/A	736993	1585980	SHO-08R	RS2	NA		188	NA	MC	N-Ei
SHO-09R	SHORE	1	R	NO	N/A	735987	1585060	SHO-09R	RS2	NA		188	NA	SC	N-Dv
SHO-10R	SHORE	1	R	NO	N/A	736839	1583610	SHO-10R	RS2	NA		188	NA	MC	N-Dv
SHO-11R	SHORE	2	R	NO	N/A	734732	1581920	SHO-11R	RS2	NA		187	NA	OM	N-Div
SHO-12T	SHORE	1	T	NO	N/A	734780	1615750	SHO-12T	RS1	NA		194	NA	MC	
SHO-12R	SHORE	2	R	NO	N/A	735247	1579920	SHO-12R	RS2	NA		187	NA	OM	N-Div
SHO-13T	SHORE	1	T	NO	N/A	733123	1609690	SHO-13T	RS1	NA		193	NA	MC	N-Dii
SHO-13R	SHORE	2	R	NO	N/A	737218	1579660	SHO-13R	RS2	NA		187	NA	OM	N-Ei
SHO-14T	SHORE	1	T	NO	N/A	732164	1607910	SHO-14T	RS1	NA		193	NA	OM	M4-Gi
SHO-14R	SHORE	2	R	NO	N/A	736875	1575000	SHO-14R	RS2	NA		186	NA	IM	N-Div
SHO-15T	SHORE	1	T	NO	N/A	737727	1596570	SHO-15T	RS1	NA		190	NA	OM	M4-Fii
SHO-15R	SHORE	2	R	NO	N/A	734738	1570800	SHO-15R	RS2	NA		185	NA	MC	N-Div
SHO-16R	SHORE	2	R	NO	N/A	735324	1570530	SHO-16R	RS2	NA		185	NA	MC	N-Dv
UCB-01T	UCB	1	T	YES	Variable/Transitional	735330	1614520	UCB-01T	RS1	NA		194	9.8	SC	N-Di
UCB-01R	UCB	1	R	NO	Sandy	732577	1606890	UCB-01R	RS1	NA		193	8.1	MC	N-Fiv

Table 3 - Site-Specific Characteristics of Proposed Target (T) and Reference (R) Assessment Stations

Station ID	Habitat	Phase	Target (T) or Reference (R)	Sampled	Sediment Type	X Coordinate	Y Coordinate	Figure Label	River Section	Habitat Size (sq. ft.)	Vegetation	River Mile	Water Depth (ft.)	River Position	Adjacent Land Use
UCB-02T	UCB	1	T	YES	Variable/Transitional	734811	1611170	UCB-02T	RS1	NA		193	17.6	MC	N-Diii
UCB-02R	UCB	1	R	NO	Gravel/Cobbles	734239	1603470	UCB-02R	RS1	NA		192	9.1	OM	M-Dii
UCB-03R	UCB	1	R	NO	Rocky	737071	1599000	UCB-03R	RS1	NA		191	7.9	MC	N-Dii
UCB-03T	UCB	1	T	YES	Gravel/Cobbles	737319	1597050	UCB-03T	RS1	NA		190	10.7	MC	N-Dii
UCB-04R	UCB	1	R	NO	Sandy	737227	1596070	UCB-04R	RS1	NA		190	16.0	MC	M4-Fiv
UCB-06T	UCB	1	T	YES	Variable/Transitional	736163	1614620	UCB-06T	RS1	NA		194	12.6	SC	N-Di
UCB-05R	UCB	1	R	NO	Variable/Transitional	736115	1589080	UCB-05R	RS1	NA		189	7.5	MC	N-Dii
UCB-07T	UCB	1	T	NO	Gravel/Cobbles	734408	1615700	UCB-07T	RS1	NA		194	9.3	MC	M3-Dv
UCB-06R	UCB	1	R	NO	Sandy	736875	1587010	UCB-06R	RS2	NA		188	NA	MC	N-Fiv
UCB-07R	UCB	1	R	NO	Fine Grained/Silty	736234	1585520	UCB-07R	RS2	NA		188	NA	SC	N-Dv
UCB-08T	UCB	1	T	NO	Sandy	736220	1613470	UCB-08T	RS1	NA		194	11.1	IM	N-Diii
UCB-08R	UCB	1	R	NO	Fine Grained/Silty	735437	1582650	UCB-08R	RS2	NA		187	0.0	MC	N-Div
UCB-09T	UCB	1	T	NO	Variable/Transitional	735436	1613100	UCB-09T	RS1	NA		194	12.7	MC	M1-Fiv
UCB-10T	UCB	1	T	NO	Sandy	735618	1612520	UCB-10T	RS1	NA		194	16.7	MC	M3-FV
UCB-09R	UCB	1	R	NO	Rocky	736471	1579260	UCB-09R	RS2	NA		187	NA	IM	N-Dii
UCB-11T	UCB	1	T	NO	Variable/Transitional	735332	1612210	UCB-11T	RS1	NA		194	17.1	IM	N-Fiv
UCB-10R	UCB	1	R	NO	Fine Grained/Silty	738129	1575040	UCB-10R	RS2	NA		186	11.7	SC	N-Ei
UCB-11R	UCB	1	R	NO	Variable/Transitional	737431	1574680	UCB-11R	RS2	NA		186	8.5	MC	N-Eii
UCB-12T	UCB	1	T	NO	Variable/Transitional	733818	1609720	UCB-12T	RS1	NA		193	15.6	MC	N-Div
UCB-13T	UCB	1	T	NO	Variable/Transitional	732699	1607730	UCB-13T	RS1	NA		193	13.5	MC	N-Fiv
UCB-12R	UCB	1	R	NO	Fine Grained/Silty	735460	1571030	UCB-12R	RS2	NA		185	14.8	MC	M1-Gi
UCB-13R	UCB	1	R	NO	Variable/Transitional	734877	1568490	UCB-13R	RS2	NA		184	14.2	MC	N-Dv
UCB-14T	UCB	1	T	NO	Variable/Transitional	733042	1606220	UCB-14T	RS1	NA		192	13.6	IM	N-Div
UCB-14R	UCB	1	R	NO	Gravel/Cobbles	736205	1565380	UCB-14R	RS2	NA		184	16.7	MC	N-Div
UCB-15T	UCB	1	T	NO	Sandy	732872	1605730	UCB-15T	RS1	NA		192	14.9	MC	M4-Gi
UCB-15R	UCB	1	R	NO	Rocky	738975	1559950	UCB-15R	RS3	NA		182	NA	MC	N-Div
UCB-16R	UCB	1	R	NO	Gravel/Cobbles	739682	1554990	UCB-16R	RS3	NA		181	16.6	MC	N-Div
UCB-16T	UCB	1	T	NO	Sandy	737122	1596790	UCB-16T	RS1	NA		190	16.0	MC	M4-Gi
UCB-17R	UCB	1	R	NO	Variable/Transitional	738459	1549560	UCB-17R	RS3	NA		180	8.9	SC	N-Dii
UCB-17T	UCB	1	T	NO	Sandy	737263	1596180	UCB-17T	RS1	NA		190	15.8	MC	M4-Gi
UCB-18T	UCB	1	T	NO	Fine Grained/Silty	737891	1595640	UCB-18T	RS1	NA		190	12.8	IM	M4-Gii
UCB-19T	UCB	1	T	NO	Sandy	737752	1595250	UCB-19T	RS1	NA		190	12.1	MC	M4-Gii
WET-01R	WET	1	R	YES	Variable/Transitional	736311	1589780	WET-01R	RS1	< 0.5 ac	Greatburreed; Wildrice	189	1.8	IM	N-Eii
WET-03R	WET	1	R	YES	N/A	736971	1575890	WET-03R	RS2	11761.0	Ricecutgrass; Watermillet	186	NA	IM	N-Div
WET-05T	WET	1	T	NO	N/A	734914	1615563	WET-05T	RS1	5192.2	Emergent	195	NA	MC	N-Dii
SAV-05T	SAV	2	T	YES	Sandy	736833	1599693	SAV-05T	RS1	82684.0	Wildcelery	191	2.6	OM	N-Dii
SAV-07T	SAV	2	T	YES	Fine Grained/Silty	736414	1593238	SAV-07T	RS1	145480.2	Wildcelery	190	1.9	MC	N-Ev
SAV-08T	SAV	2	T	YES	Fine Grained/Silty	735789	1565500	SAV-08T	RS2	47148.5	Wildcelery	184	4.1	IM	M4-Fii
SAV-09T	SAV	2	T	YES	Fine Grained/Silty	735151	1566315	SAV-09T	RS2	644688.0	Wildcelery	184	7.0	MC	M4-Gi
SAV-12T	SAV	2	T	NO	Variable/Transitional	733663	1604545	SAV-12T	RS1	55637.1	Non-TrapaSAV	192	5.1	MC	N-Diii
SAV-13T	SAV	2	T	NO	Variable/Transitional	734954	1603519	SAV-13T	RS1	14613.1	Non-TrapaSAV	192	5.5	SM	N-Div
SAV-14T	SAV	2	T	NO	Fine Grained/Silty	735599	1601476	SAV-14T	RS1	13306.2	Non-TrapaSAV	191	3.5	IM	M4-Gi
SAV-15T	SAV	2	T	NO	Sandy	736150	1599603	SAV-15T	RS1	31565.4	Non-TrapaSAV	191	5.3	IM	M4-Gi

Table 3 - Site-Specific Characteristics of Proposed Target (T) and Reference (R) Assessment Stations

Station ID	Habitat	Phase	Target (T) or Reference (R)	Sampled	Sediment Type	X Coordinate	Y Coordinate	Figure Label	River Section	Habitat Size (sq. ft.)	Vegetation	River Mile	Water Depth (ft.)	River Position	Adjacent Land Use
SAV-16T	SAV	2	T	NO	Variable/Transitional	736115	1589080	SAV-16T	RS1	89789.5	Non-TrapaSAV	189	7.5	MC	N-Dii
SAV-17T	SAV	2	T	NO	Fine Grained/Silty	736848	1592609	SAV-17T	RS1	87558.5	Non-TrapaSAV	189	2.4	MC	N-Dii
SAV-18T	SAV	2	T	NO	Fine Grained/Silty	736344	1590300	SAV-18T	RS1	123409.9	Non-TrapaSAV	189	6.1	IM	N-Eii
SAV-19T	SAV	2	T	NO	Fine Grained/Silty	736268	1583765	SAV-19T	RS2	305349.2	Non-TrapaSAV	188	NA	MC	N-Dv
SAV-20T	SAV	2	T	NO	Fine Grained/Silty	737809	1577286	SAV-20T	RS2	177477.1	Non-TrapaSAV	186	7.6	IM	N-Dii
SAV-21T	SAV	2	T	NO	Fine Grained/Silty	735066	1568965	SAV-21T	RS2	564257.5	Non-TrapaSAV	184	8.6	IM	N-Dv
SAV-22R	SAV	2	R	NO	Fine Grained/Silty	736067	1572906	SAV-22R	RS2	29147.6	Non-TrapaSAV	185	5.0	MC	N-Div
SAV-22T	SAV	2	T	NO	Fine Grained/Silty	738977	1540301	SAV-22T	RS3	262991.1	Non-TrapaSAV	178	3.8	OM	N-Div
SAV-23R	SAV	2	R	NO	Gravel/Cobbles	739400	1559387	SAV-23R	RS3	65787.7	Non-TrapaSAV	182	NA	MC	N-Dv
SAV-23T	SAV	2	T	NO	Fine Grained/Silty	736620	1537939	SAV-23T	RS3	20199.542	Trapa	178	3.5	MC	N-Diii
SAV-24R	SAV	2	R	NO	Variable/Transitional	738781	1547554	SAV-24R	RS3	110788.5	Non-TrapaSAV	180	7.0	MC	N-Di
SAV-24T	SAV	2	T	NO	Fine-Grained/Silty	735348	1533379	SAV-24T	RS3	100833.6	Non-TrapaSAV	177	5.7	OM	N-Div
SAV-25R	SAV	2	R	NO	Fine-Grained/Silty	737942	1543236	SAV-25R	RS3	89053.1	Non-TrapaSAV	179	2.2	MC	N-Di
SAV-25T	SAV	2	T	NO	Fine-Grained/Silty	735536	1528346	SAV-25T	RS3	91569.4	Non-TrapaSAV	176	0.6	MC	N-Div
SAV-26R	SAV	2	R	NO	Sandy	735523	1532624	SAV-26R	RS3	26700.7	Non-TrapaSAV	177	13.3	MC	N-Dii
SAV-26T	SAV	2	T	NO	Fine-Grained/Silty	725352	1501513	SAV-26T	RS3	1002657.686	Trapa	170	5.0	MC	N-Diii
SAV-27R	SAV	2	R	NO	Fine-Grained/Silty	734581	1526117	SAV-27R	RS3	87573.3	Non-TrapaSAV	175	6.3	MC	M4-Dv
SAV-28R	SAV	2	R	NO	Fine-Grained/Silty	733693	1521740	SAV-28R	RS3	35928.3	Non-TrapaSAV	175	3.5	OM	N-Eii
SAV-29R	SAV	2	R	NO	Variable/Transitional	730687	1518865	SAV-29R	RS3	46432.0	Non-TrapaSAV	174	1.5	OM	N-Div
SAV-30R	SAV	2	R	NO	Fine Grained/Silty	730669	1512436	SAV-30R	RS3	82690.2	Non-TrapaSAV	173	3.6	OM	N-Dii
SAV-31R	SAV	2	R	NO	Variable/Transitional	713785	1490258	SAV-31R	RS3	55157.4	Non-TrapaSAV	167	10.2	MC	N-Dv
SAV-32R	SAV	2	R	NO	Rocky	713110	1487528	SAV-32R	RS3	397161.701	Trapa	166	4.2	MC	N-Div
SAV-33R	SAV	2	R	NO	N/A	710372	1480373	SAV-33R	RS3	851511.4	Non-TrapaSAV	165	NA	SM	N-Fiv
SAV-34R	SAV	2	R	NO	Gravel/Cobbles	714027	1470941	SAV-34R	RS3	71693.6	Non-TrapaSAV	163	5.2	MC	N-Div
SAV-35R	SAV	2	R	NO	Fine Grained/Silty	737681	1546717	SAV-35R	RS3	475270.8	Non-TrapaSAV	180	7.2	MC	N-Div
SHO-2R	SHORE	2	R	NO	N/A	718297	1450400	SHO-02R	RS3	NA		158	NA	MC	N-Div
SHO-05T	SHORE	2	T	YES	N/A	736685	1597726	SHO-05T	RS1	NA		190	NA	MC	N-Div
SHO-07T	SHORE	2	T	YES	N/A	736149	1594803	SHO-07T	RS1	NA		190	NA	SM	N-Dii
SHO-08T	SHORE	2	T	YES	N/A	737753	1594861	SHO-08T	RS1	NA		190	NA	OM	M4-Di
SHO-09T	SHORE	2	T	YES	Fine Grained/Silty	734662	1566994	SHO-09T	RS2	NA		184	NA	OM	N-Div
SHO-10T	SHORE	2	T	YES	N/A	736594	1593663	SHO-10T	RS1	NA		190	NA	MC	N-Div
SHO-11T	SHORE	2	T	YES	N/A	736460	1565672	SHO-11T	RS2	NA		184	NA	OM	N-Div
SHO-16T	SHORE	2	T	NO	N/A	734152	1604615	SHO-16T	RS1	NA		192	NA	SM	N-Diii
SHO-17T	SHORE	2	T	NO	N/A	734715	1603917	SHO-17T	RS1	NA		192	NA	SM	N-Div
SHO-17R	SHORE	2	R	NO	N/A	737071	1599000	SHO-17R	RS1	NA		191	NA	MC	N-Dii
SHO-18T	SHORE	2	T	NO	N/A	736076	1602254	SHO-18T	RS1	NA		191	NA	OM	N-Diii
SHO-18R	SHORE	2	R	NO	N/A	736076	1566619	SHO-18R	RS2	NA		184	NA	SM	N-Ei
SHO-19T	SHORE	2	T	NO	N/A	736549	1600384	SHO-19T	RS1	NA		191	NA	MC	N-Div
SHO-19R	SHORE	2	R	NO	N/A	737686	1574389	SHO-19R	RS2	NA		185	NA	MC	N-Eii
SHO-20T	SHORE	2	T	NO	N/A	736551	1598716	SHO-20T	RS1	NA		191	NA	IM	M1-Gi
SHO-20R	SHORE	2	R	NO	N/A	739349	1558156	SHO-20R	RS3	NA		182	NA	MC	N-Div
SHO-21T	SHORE	2	T	NO	N/A	736922	1592921	SHO-21T	RS1	NA		190	NA	MC	N-Di
SHO-21R	SHORE	2	R	NO	N/A	738331	1550675	SHO-21R	RS3	NA		180	NA	MC	N-Dii
SHO-22T	SHORE	2	T	NO	N/A	736898	1592104	SHO-22T	RS1	NA		189	NA	MC	N-Dii

Table 3 - Site-Specific Characteristics of Proposed Target (T) and Reference (R) Assessment Stations

Station ID	Habitat	Phase	Target (T) or Reference (R)	Sampled	Sediment Type	X Coordinate	Y Coordinate	Figure Label	River Section	Habitat Size (sq. ft.)	Vegetation	River Mile	Water Depth (ft.)	River Position	Adjacent Land Use
SHO-22R	SHORE	2	R	NO	N/A	739437	1549917	SHO-22R	RS3	NA		180	NA	MC	N-Dii
SHO-23T	SHORE	2	T	NO	N/A	736821	1591544	SHO-23T	RS1	NA		189	NA	MC	N-Dii
SHO-23R	SHORE	2	R	NO	N/A	737810	1547284	SHO-23R	RS3	NA		180	NA	MC	N-Div
SHO-24T	SHORE	2	T	NO	N/A	737088	1588553	SHO-24T	RS1	NA		189	NA	IM	M3-Dii
SHO-24R	SHORE	2	R	NO	N/A	737277	1543679	SHO-24R	RS3	NA		179	NA	MC	N-Dii
SHO-25T	SHORE	2	T	NO	N/A	735250	1581683	SHO-25T	RS2	NA		187	NA	SM	N-Diii
SHO-25R	SHORE	2	R	NO	N/A	738354	1542383	SHO-25R	RS3	NA		179	NA	MC	N-Eii
SHO-26T	SHORE	2	T	NO	N/A	738248	1576225	SHO-26T	RS2	NA		186	NA	OM	N-Fiv
SHO-26R	SHORE	2	R	NO	N/A	733270	1521320	SHO-26R	RS3	NA		174	NA	OM	N-Di
SHO-27T	SHORE	2	T	NO	N/A	735502	1572058	SHO-27T	RS2	NA		185	NA	MC	N-Div
SHO-27R	SHORE	2	R	NO	N/A	735295	1530763	SHO-27R	RS3	NA		176	NA	MC	N-Di
SHO-28T	SHORE	2	T	NO	N/A	735127	1569379	SHO-28T	RS2	NA		184	NA	IM	N-Dv
SHO-28R	SHORE	2	R	NO	N/A	710857	1481733	SHO-28R	RS3	NA		165	NA	SM	N-Div
SHO-29T	SHORE	2	T	NO	N/A	735496	1567513	SHO-29T	RS2	NA		184	NA	IM	N-Div
SHO-29R	SHORE	2	R	NO	N/A	713219	1471333	SHO-29R	RS3	NA		163	NA	MC	N-Fiv
SHO-30T	SHORE	2	T	NO	N/A	738851	1558109	SHO-30T	RS3	NA		182	NA	MC	N-Diii
SHO-30R	SHORE	2	R	NO	N/A	713746	1468995	SHO-30R	RS3	NA		162	NA	MC	N-Div
SHO-31T	SHORE	2	T	NO	N/A	737928	1545526	SHO-31T	RS3	NA		179	NA	MC	N-Di
SHO-31R	SHORE	2	R	NO	N/A	714627	1462000	SHO-31R	RS3	NA		161	NA	MC	N-Di
SHO-32T	SHORE	2	T	NO	N/A	726357	1510216	SHO-32T	RS3	NA		172	NA	MC	N-Div
SHO-32R	SHORE	2	R	NO	N/A	714201	1460278	SHO-32R	RS3	NA		161	NA	OM	N-Diii
SHO-33T	SHORE	2	T	NO	N/A	716048	1459342	SHO-33T	RS3	NA		160	NA	MC	N-Dii
SHO-33R	SHORE	2	R	NO	N/A	717344	1448281	SHO-33R	RS3	NA		158	NA	MC	N-Div
SHO-34R	SHORE	2	R	NO	N/A	717456	1450412	SHO-34R	RS3	NA		159	NA	SC	N-Div
SHO-34T	SHORE	2	T	YES	N/A	737428	1598533	SHO-34T	RS1	NA		191	NA	OM	N-Di
UCB-04T	UCB	2	T	YES	Sandy	736896	1594095	UCB-04T	RS1	NA		190	6.9	MC	N-Div
UCB-05T	UCB	2	T	YES	Fine-Grained/Silty	734938	1567756	UCB-05T	RS2	NA		184	11.1	MC	N-Dv
UCB-18R	UCB	2	R	NO	Variable/Transitional	737626	1544710	UCB-18R	RS3	NA		179	11.0	MC	N-Di
UCB-19R	UCB	2	R	NO	Fine Grained/Silty	738093	1542696	UCB-19R	RS3	NA		179	4.0	MC	N-Dii
UCB-20R	UCB	2	R	NO	Sandy	735173	1531228	UCB-20R	RS3	NA		176	9.1	MC	N-Di
UCB-20T	UCB	2	T	NO	Fine-Grained/Silty	724997	1506548	UCB-20T	RS3	NA		171	10.5	MC	N-Div
UCB-21R	UCB	2	R	NO	Gravel/Cobbles	732995	1521384	UCB-21R	RS3	NA		174	16.9	MC	N-Di
UCB-21T	UCB	2	T	NO	Sandy	724938	1506220	UCB-21T	RS3	NA		171	27.2	MC	N-Div
UCB-22R	UCB	2	R	NO	Fine-Grained/Silty	734738	1570427	UCB-22R	RS2	NA		185	24.8	MC	N-Div
UCB-22T	UCB	2	T	NO	Variable/Transitional	724583	1498631	UCB-22T	RS3	NA		169	5.9	OM	M4-Diii
UCB-23R	UCB	2	R	NO	Gravel/Cobbles	738882	1560795	UCB-23R	RS3	NA		183	NA	MC	
UCB-23T	UCB	2	T	NO	Fine Grained/Silty	723351	1497117	UCB-23T	RS3	NA		169	1.5	OM	N-Eii
UCB-24R	UCB	2	R	NO	Sandy	739139	1553981	UCB-24R	RS3	NA		181	14.3	MC	N-Diii
UCB-24T	UCB	2	T	NO	Variable/Transitional	712078	1488248	UCB-24T	RS3	NA		166	12.3	MC	M4-Gi
UCB-25R	UCB	2	R	NO	Variable/Transitional	739347	1549274	UCB-25R	RS3	NA		180	9.9	MC	N-Dii
UCB-25T	UCB	2	T	NO	Fine Grained/Silty	717160	1446497	UCB-25T	RS3	NA		158	3.8	OM	N-Ei
UCB-26T	UCB	2	T	NO	Variable/Transitional	733415	1604837	UCB-26T	RS1	NA		192	7.2	SM	N-Diii
UCB-26R	UCB	2	R	NO	Fine-Grained/Silty	738453	1546918	UCB-26R	RS3	NA		180	2.7	MC	N-Di
UCB-27R	UCB	2	R	NO	Sandy	737263	1544865	UCB-27R	RS3	NA		179	11.8	MC	N-Di

Table 3 - Site-Specific Characteristics of Proposed Target (T) and Reference (R) Assessment Stations

Station ID	Habitat	Phase	Target (T) or Reference (R)	Sampled	Sediment Type	X Coordinate	Y Coordinate	Figure Label	River Section	Habitat Size (sq. ft.)	Vegetation	River Mile	Water Depth (ft.)	River Position	Adjacent Land Use
UCB-27T	UCB	2	T	NO	Sandy	733072	1604702	UCB-27T	RS1	NA		192	15.4	MC	M4-Gi
UCB-28T	UCB	2	T	NO	Sandy	733271	1604459	UCB-28T	RS1	NA		192	15.7	MC	M4-Gi
UCB-28R	UCB	2	R	NO	Fine Grained/Silty	734852	1526846	UCB-28R	RS3	NA		176	8.9	MC	N-Div
UCB-29T	UCB	2	T	NO	Fine Grained/Silty	734123	1604405	UCB-29T	RS1	NA		192	NA	SM	N-Diii
UCB-29R	UCB	2	R	NO	Gravel/Cobbles	734967	1525596	UCB-29R	RS3	NA		175	11.8	MC	N-Div
UCB-30T	UCB	2	T	NO	Variable/Transitional	733323	1604034	UCB-30T	RS1	NA		192	9.8	OM	N-Dii
UCB-30R	UCB	2	R	NO	Gravel/Cobbles	734264	1524624	UCB-30R	RS3	NA		175	8.2	MC	M4-Fv
UCB-31T	UCB	2	T	NO	Sandy	733883	1603848	UCB-31T	RS1	NA		192	14.6	MC	N-Div
UCB-31R	UCB	2	R	NO	Variable/Transitional	731009	1516279	UCB-31R	RS3	NA		173	10.6	MC	N-Di
UCB-32R	UCB	2	R	NO	Gravel/Cobbles	730129	1512064	UCB-32R	RS3	NA		172	9.2	OM	N-Di
UCB-32T	UCB	2	T	NO	Variable/Transitional	735839	1602444	UCB-32T	RS1	NA		191	13.2	OM	M1-Fii
UCB-33R	UCB	2	R	NO	Rocky	729242	1511571	UCB-33R	RS3	NA		172	19.9	MC	N-Dii
UCB-33T	UCB	2	T	NO	Fine-Grained/Silty	735510	1601939	UCB-33T	RS1	NA		191	7.4	IM	M4-Gi
UCB-34T	UCB	2	T	NO	Variable/Transitional	736277	1601098	UCB-34T	RS1	NA		191	10.5	OM	N-Diii
UCB-34R	UCB	2	R	NO	Sandy	728670	1511148	UCB-34R	RS3	NA		172	17.3	MC	N-Di
UCB-35R	UCB	2	R	NO	Fine-Grained/Silty	728323	1511349	UCB-35R	RS3	NA		172	19.4	MC	M4-Di
UCB-35T	UCB	2	T	NO	Sandy	735891	1600942	UCB-35T	RS1	NA		191	14.2	MC	M4-Gi
UCB-36T	UCB	2	T	NO	Sandy	735952	1600504	UCB-36T	RS1	NA		191	14.4	MC	M4-Gi
UCB-36R	UCB	2	R	NO	Variable/Transitional	725426	1508868	UCB-36R	RS3	NA		171	16.0	MC	N-Div
UCB-37R	UCB	2	R	NO	Gravel/Cobbles	724756	1508354	UCB-37R	RS3	NA		171	15.0	MC	N-Div
UCB-37T	UCB	2	T	NO	Sandy	736768	1598089	UCB-37T	RS1	NA		191	11.3	MC	N-Dii
UCB-38T	UCB	2	T	NO	Fine-Grained/Silty	736310	1596612	UCB-38T	RS1	NA		190	NA	SM	N-Ei
UCB-38R	UCB	2	R	NO	Gravel/Cobbles	721067	1496508	UCB-38R	RS3	NA		169	10.0	MC	N-Dii
UCB-39R	UCB	2	R	NO	Rocky	719657	1496819	UCB-39R	RS3	NA		168	NA	OM	M1-Fii
UCB-39T	UCB	2	T	NO	Fine-Grained/Silty	736806	1592340	UCB-39T	RS1	NA		189	13.0	MC	M1-Di
UCB-40R	UCB	2	R	NO	Gravel/Cobbles	714308	1490469	UCB-40R	RS3	NA		167	11.6	MC	N-Di
UCB-40T	UCB	2	T	NO	Variable/Transitional	736274	1591993	UCB-40T	RS1	NA		189	15.5	MC	M4-Gi
UCB-41R	UCB	2	R	NO	FineGrained/Silty	714513	1489493	UCB-41R	RS3	NA		167	15.6	MC	N-Diii
UCB-41T	UCB	2	T	NO	Sandy	736315	1590930	UCB-41T	RS1	NA		189	14.8	MC	
UCB-42R	UCB	2	R	NO	Gravel/Cobbles	710635	1482682	UCB-42R	RS3	NA		165	NA	MC	N-Dii
UCB-42T	UCB	2	T	NO	Variable/Transitional	736123	1589778	UCB-42T	RS1	NA		189	8.6	IM	N-Eii
UCB-43R	UCB	2	R	NO	Gravel/Cobbles	711342	1482012	UCB-43R	RS3	NA		165	NA	MC	M4-Fi
UCB-43T	UCB	2	T	NO	Fine-Grained/Silty	736443	1586309	UCB-43T	RS2	NA		188	NA	SM	N-Ei
UCB-44T	UCB	2	T	NO	FineGrained/Silty	735874	1583204	UCB-44T	RS2	NA		187	NA	MC	N-Dv
UCB-44R	UCB	2	R	NO	Sandy	710823	1478481	UCB-44R	RS3	NA		164	NA	SM	N-Di
UCB-45R	UCB	2	R	NO	Gravel/Cobbles	712699	1467576	UCB-45R	RS3	NA		162	10.2	OM	M4-Dv
UCB-45T	UCB	2	T	NO	Sandy	735286	1581500	UCB-45T	RS2	NA		187	NA	SM	N-Eii
UCB-46T	UCB	2	T	NO	Fine-Grained/Silty	737639	1576507	UCB-46T	RS2	NA		186	19.5	MC	N-Fiv
UCB-46R	UCB	2	R	NO	Sandy	714043	1466121	UCB-46R	RS3	NA		162	9.2	IM	M4-Dv
UCB-47R	UCB	2	R	NO	Variable/Transitional	716723	1457418	UCB-47R	RS3	NA		160	9.4	MC	N-Dii
UCB-47T	UCB	2	T	NO	Fine-Grained/Silty	735615	1566940	UCB-47T	RS2	NA		184	11.0	IM	N-Fiii
UCB-48R	UCB	2	R	NO	Gravel/Cobbles	716041	1456336	UCB-48R	RS3	NA		160	15.0	MC	N-Dii
UCB-48T	UCB	2	T	NO	Fine-Grained/Silty	736144	1566022	UCB-48T	RS2	NA		184	10.6	MC	N-Eiii
UCB-49R	UCB	2	R	NO	Rocky	714942	1445994	UCB-49R	RS3	NA		157	7.7	OM	N-Dv

Table 3 - Site-Specific Characteristics of Proposed Target (T) and Reference (R) Assessment Stations

Station ID	Habitat	Phase	Target (T) or Reference (R)	Sampled	Sediment Type	X Coordinate	Y Coordinate	Figure Label	River Section	Habitat Size (sq. ft.)	Vegetation	River Mile	Water Depth (ft.)	River Position	Adjacent Land Use
UCB-49T	UCB	2	T	NO	Fine Grained/Silty	737798	1545457	UCB-49T	RS3	NA		179	3.3	MC	N-Di
UCB-50R	UCB	2	R	NO	Variable/Transitional	714292	1442807	UCB-50R	RS3	NA		157	8.3	MC	N-Ei
UCB-50T	UCB	2	T	NO	Fine-Grained/Silty	736382	1534993	UCB-50T	RS3	NA		177	13.2	MC	N-Dii
WET-02T	WET	2	T	YES	Fine-Grained/Silty	734917	1602854	WET-02T	RS1	4578.1	Pickerelweed; Great Burreed	192	0.2	IM	M4-Gi
WET-04T	WET	2	T	YES	Fine-Grained/Silty	735689	1567107	WET-04T	RS2	9946.9	Cattail; Great Burreed	184	2.9	IM	N-Eii
WET-06R	WET	1	R	NO	N/A	737239	1591880	WET-06R	RS1	< 0.5 ac	Emergent	189	NA	TRIB	N-Ei
WET-07T	WET	2	T	NO	N/A	735492	1589119	WET-07T	RS1	77914.1	Emergent	189	NA	MC	N-Dii
WET-08R	WET	2	R	NO	Fine-Grained/Silty	736054	1582907	WET-08R	RS2	22806.3	Emergent	187	NA	SM	N-Ei
WET-09T	WET	2	T	NO	Fine-Grained/Silty	737882	1575985	WET-09T	RS2	246532.7	Emergent	186	NA	OM	N-Eii
WET-10R	WET	2	R	NO	N/A	711230	1480802	WET-10R	RS3	25239.7	Emergent	165	NA	MC	N-Div
WET-11R	WET	2	R	NO	N/A	734776	1532192	WET-11R	RS3	56615.4	Emergent	176	NA	OM	N-Eii
WET-12T	WET	2	T	NO	N/A	736313	1595860	WET-12T	RS1	33460	Emergent	190	NA	TRIB	N-Eii
WET-13T	WET	2	T	NO	N/A	737287	1573710	WET-13T	RS2	86927.9	Emergent	185	NA	SC	N-Dii
WET-14R	WET	2	R	NO	N/A	737955	1575052	WET-14R	RS2	9687	Emergent	185	NA	SC	N-Eii
WET-15T	WET	2	T	NO	N/A	736017	1538188	WET-15T	RS3	> 0.5 ac	Emergent	177	NA	TRIB	N-Diii
WET-16R	WET	2	R	NO	N/A	735336	1538489	WET-16R	RS3	> 0.5 ac	Emergent	177	NA	TRIB	N-Diii

Notes:

1. Water depths are computed as the difference between the water surface elevation and the sediment elevation. The water surface elevation was defined by a flow condition. Each elevation was referenced in the vertical direction to NAVD88 (ft). Water depths were estimated based on an average flow of 4,300 cfs at Ft. Edward (USGS 01327750). This was the mean flow between May and November based on monthly data between 1977 and 2002. The point data was interpolated using triangulated interpolated networks (TINs) and converted into a 5x5 ft2 grid for presentation purposes. Data gaps include the west bank of Griffin Island, the West channel of lock 6, and other areas between reaches. There were 8 water depth grids created, for purposes of this analysis, they were combined into one grid using a mosaicing technique in GIS. Grid cells were then "summarized by zone" - then, using a unique ID field, each station was joined to a grid cell with a specific water depth. Further documentation can be provided for how the water depth grids were created, if necessary.
2. Adjacent Land use. See codes in Table 5 of the Habitat Delineation Report. These were instances where there was some discrepancy with the land use classification or the station was located in an area which had not been identified with shoreline adjacent land use.
3. River position indicates if the station is located on an inner meander (IM), outer meander (OM), within or adjacent to the main channel (MC), within or adjacent to a secondary channel (SC), or within a tributary or backwater area (TRIB).
4. As noted in 1), there *are* data gaps in the water depth grids. Therefore, in some instances where an “NA” is indicated in the Water Depth column, the actual depth may be greater than 0.0 ft.

3. Habitat Suitability Index Sampling Stations

3.1 Introduction

As discussed in the Phase 1 HA Report (BBL and Exponent, 2005a), site-specific functional capacity index (FCI) models have been developed to describe the functions performed by habitat types and to evaluate the success of the habitat replacement and reconstruction program. HSI models will also be used to supplement site-specific fish and wildlife FCI models for selected species. The use of these models will be fully described in the *Adaptive Management Plan*. The HSIs were developed by the U.S. Fish and Wildlife Service (USFWS) as a tool for evaluating impacts on fish and wildlife habitat resulting from water or land use changes (USFWS, 1981).

The species for which HSIs will be completed were described in the revised Phase 1 HA Report (BBL and Exponent, 2005a) and are shown below in Tables 4 and 5. The specific programs under which the data necessary to complete the HSI assessments will be collected are also shown in Tables 4 and 5. The species-specific HSI manuals were obtained in electronic format from the U.S. Geological Survey website (http://www.nwrc.usgs.gov/wdb/pub/hsi/hsiindex.htm). The information provided in the HSI manuals was used to develop standard operating procedures (SOPs) for collecting the necessary field data to complete the model or portion of the model as requested by the USEPA. As requested by the USEPA, only the foraging component of the Great Blue Heron HSI model is being completed. The SOPs are provided as Attachments A-G to this SHAWP.

To complete an HSI assessment, the boundaries of the study area should include sites where actual physical impacts will occur and contiguous areas that are biologically linked to the site of physical impact where secondary changes are anticipated (Terrell et al., 1982). For this project, the HSI study area is defined as the Upper Hudson River from Fort Edward to the Federal Dam at Troy. Within the study area, sampling sites have been selected to characterize for habitat suitability areas that will be physically impacted by dredging (targeted) and areas that will not be impacted (non-targeted) within each river reach. River reaches in the Upper Hudson River are defined by the location of the locks and dams that separate the river into a series of pools of varying sizes. Data will be collected at multiple small-scale locations within each river reach and combined to characterize the habitat suitability of each river reach and to compare habitat suitability among targeted and non-targeted areas within-reach locations. This approach also will allow analysis and review of habitat data on a

pool-specific basis for selected areas for use in evaluating habitat replacement and reconstruction (e.g., adaptive management program).

The selection of the sample sites was designed to include one or more reaches with habitat conditions that are representative of a particular section of the study area. (Terrell et al., 1982). Although it is not the intent of this program to identify and characterize the "best" or most suitable habitat for any of the selected species (Tables 4 and 5) unless such conditions occur within a targeted area, or within a non-targeted area selected to serve as a reference for the targeted area, an effort was made to capture the full range of habitat conditions within the project area.

3.2 Methods

Much of the data necessary to complete the HSI assessments have been, or will be, collected under existing programs such as the HDA Program (BBL, 2003a), Sediment Sampling and Analysis Program (SSAP) (QEA, 2002) and BMP (QEA, 2004b). Data not collected under those programs will either be added to the habitat assessment program stations, calculated directly from existing data generated by those programs, or collected from new stations established specifically for the HSI assessments. F or example, percent cover of backwater areas, used in the largemouth bass HSI, can be calculated for each river section from the aquatic vegetation bed delineation maps and bathymetric data collected from the habitat assessment and side scan sonar (SSS) programs, respectively (Table 4). Similarly, secchi depth will be added to shoreline stations as part of the belted kingfisher HSI assessment (Table 5). Alternatively, for other types of information, new stations/transects will be established. For example, to determine the number of suitable tree cavities within 350 m of shoreline, used in the wood duck HSI, additional stations will be located on publicly accessible land with forested areas greater than 0.4 hectares (Table 5). Tables 4 and 5 below list the data needs for completing the HSIs and the source(s) for those data. Attachments A through G provide the SOPs for the collection and use of data to complete the HSI models. As stated above, HSI assessments will not be completed at the off-site reference stations.

At the time of this submittal, the USEPA has not approved the Phase 1 HA Report. Thus, the specific species for which HSI assessments will be completed, assessment station locations, and the SOPs are subject to change following USEPA approval of the Phase 1 HA Report.

Table 4 – Habitat Suitability Index for Fish Species: Data Requirements and Source

Species				Yellow Perch	Smallmouth Bass	Largemouth Bass	Common Shiner	Bluegill
Data Needed	**Data Source**	**SOP**	**Sample Number, Location, Frequency**					
% Pool and Backwater Area	Bathymetry data (SSAP)	SSAP-QAPP, Appendix 2	Determined from existing data using GIS.	X		X		
% Cover in pool and backwater areas	SSS debris data	SSAP-QAPP, Appendix 17	Determined from existing data using GIS.	X				
% Pools	Bathymetry data (SSAP)	SSAP-QAPP, Appendix 2	Determined from existing data using GIS.		X		X	X
Depth of pools	Bathymetry data (SSAP)	SSAP-QAPP, Appendix 2	Determined from existing data using GIS.		X			
Pool Class	Bathymetry data (SSAP); SSS debris data	SSAP-QAPP, Appendices 2 and 17	Determined from existing data using GIS.				X	
Water temperature	BMP; UCB, SAV, and WET stations	BMP-QAPP, Appendix 2; SHAWP Attachments A and B	Samples collected at 118 target and reference UCB and SAV stations (subset sampled daily during HDA field season) and 5 BMP stations (weekly). UCB and SAV sample stations are shown on Figures 3 through 17.	X	X	X	X	X
Stream gradient	Bathymetry data (SSAP)	SSAP-QAPP, Appendix 2; SHAWP Attachment A	Determined from existing data using GIS.		X	X		X
Minimum DO in summer	BMP, UCB, SAV, and WET stations	BMP-QAPP, Appendix 2; Phase 1 HA Report	Samples collected at 118 target and reference UCB and SAV stations (subset sampled daily during HDA field season) and 5 BMP stations (weekly). UCB and SAV sample stations are shown on Figures 3 through 17.	X	X	X		X
pH range	BMP, UCB, SAV, and WET stations	BMP-QAPP, Appendix 2; Phase 1 HA Report	Samples collected at 118 target and reference UCB and SAV stations (subset sampled daily during HDA field season) and 5 BMP stations (weekly). UCB and SAV sample stations are shown on Figures 3 through 17.	X	X	X	X	X
Degree days between 4 and 10^{0}C from Oct 30 to April 1	BMP	BMP-QAPP, Appendix 2; Phase 1 HA Report	Samples collected at 118 target and reference UCB and SAV stations (subset sampled daily during HDA field season) and 5 BMP stations (weekly). UCB and SAV sample stations are shown on Figures 3 through 17.	X				
Dominant substrate	SSAP	SSAP-QAPP, Appendices 16 and 17	Determined from existing data using GIS.		X	X	X	X
Average water depth	Bathymetry data (SSAP)	SSAP-QAPP, Appendix 17, HDA Work Plan Attachments A and B	Determined from existing data using GIS.		X			
% Cover in river	SSS debris data; habitat delineation maps	SSAP-QAPP, Appendix 17, HDA Work Plan Attachments A and B	Determined from existing data using GIS.		X	X		X
Turbidity	BMP, UCB, SAV, and WET stations	BMP-QAPP, Appendix 2; Phase 1 HA Report	Samples collected at 118 target and reference UCB and SAV stations (subset sampled daily during HDA field season) and 5 BMP stations (weekly). UCB and SAV sample stations are shown on Figures 3 through 17.		X	X	X	X
Water level fluctuations	Upriver end of NY State Canal Corporation locks	SHAWP, Attachment A	Determined from existing data using GIS.		X	X		
Current Velocity	UCB and SAV stations	SHAWP, Attachment A	Samples collected at 118 target and reference UCB and SAV stations (subset sampled daily during HDA field season) and 5 BMP stations (weekly). UCB and SAV sample stations are shown on Figures 3 through 17.			X	X	X
Salinity	In the Upper Hudson River, salinity is always within the optimal range (0 to 2.5 ppt); variable set to 1.0.	NA	N/A			X		
% Water vegetated	Habitat delineation maps	SHAWP, Attachment A	Determined from existing data using GIS.				X	X

Notes:
1. UCB – unconsolidated river bottom stations
2. SAV – aquatic vegetation beds (also known as submerged aquatic vegetation)
3. WET – fringing riverine wetland stations
4. BMP – baseline monitoring program
5. SSS – side scan sonar (completed as part of the sediment sampling program)
6. SSAP – Sediment sampling and analysis program
7. HDA – habitat delineation and assessment (BBL, 2003a)
8. SSAP-QAPP – Quality Assurance Project for the sediment sampling and analysis program quality assurance project plan (Environmental Standards and QEA, 2002)

Table 5 – Habitat Suitability Index for Non-Fish Species: Data Requirements and Source

Species				Belted Kingfisher	Great Blue Heron	Wood Duck	Snapping Turtle	Muskrat	Mink
Data Needed	**Data Source**	**SOP**	**Sample Number, Location, Frequency**						
Water transparency	Kd from UCB, SAV, and WET station assessments; Secchi depth added to Shoreline station assessments.	HDA Work Plan Attachment B (for Kd); SHAWP Attachment B (for Secchi)	Kd samples collected at target and reference UCB, SAV and WET stations (subset sampled daily during HDA field season).Secchi data collected from 68 target and reference shoreline stations. UCB, SAV, WET and Shoreline sample stations are shown on Figures 3 through 17.	X					
% Water surface obstruction	Shoreline stations	HDA Work Plan Attachment C	Data collected from 68 target and reference shoreline stations. Shoreline sample stations are shown on Figures 3 through 17.	X					
% Water ≤ 60-cm depth	Bathymetry data (SSAP)	SSAP-QAPP, Appendix 2	Determined from existing data using GIS.	X					
% Riffles	Aerial photographs from habitat delineation work	SHAWP Attachment B	Determined from existing data using GIS.	X					
# Perches/km	Shoreline station assessments	SHAWP Attachment B	Data collected from 68 target and reference shoreline stations. Shoreline sample stations are shown on Figures 3 through 17. Distance to nesting soil bank Distance from Shoreline stations to nest locations identified by natural resource agencies (NYSDEC et al. 2004) SHAWP Attachment B Determined from existing data using GIS.	X					
Distance to nesting soil bank	Distance from Shoreline stations to nest locations identified by natural resource agencies (NYSDEC et al. 2004)	SHAWP Attachment B	Determined from existing data using GIS.	X					
% Littoral cover	SSS debris; habitat delineation maps	SSAP-QAPP, Appendix 17, HDA Work Plan Attachments A and B	Determined from existing data using GIS.				X		
Water temperature	BMP, UCB, SAV, and WET station assessments	BMP-QAPP, Appendix 2; SHAWP Attachment E	Samples collected at target and reference UCB, SAV, and WET stations (subset sampled daily during HDA field season) and 5 BMP stations (weekly). UCB, SAV, and WET sample stations are shown on Figures 3 through 17.				X		
% Water with emergent vegetation	Habitat delineation maps	SHAWP Attachments D and F	Determined from existing data using GIS.			X		X	
% Herbaceous canopy within 10m of shoreline	Shoreline station assessments	HDA Work Plan Attachment C; SHAWP Attachment F	Data collected from 68 target and reference shoreline stations. Shoreline sample stations are shown on Figures 3 through 17.					X	
% Of year with surface water	Remedial activities will not change this variable. Based on conservative estimate that Upper Hudson River can freeze over from December through March results in variable set to 66%. For mink, the resultant subindex is 0.8; for muskrat, the resultant subindex is 0.1.	NA	N/A					X	X
% Stream gradient	Bathymetry data (SSAP)	SSAP-QAPP, Appendix 2; SHAWP Attachment F	Determined from existing data using GIS.					X	
Distance between nest and forage areas	Aerial photographs	SHAWP Attachment C	Determined from existing data using GIS.		X				
Water body with suitable prey/substrate	Suitable prey/substrate is assumed to always be present; variable set to 1.0.	NA	N/A		X				
Presence of 100-m disturbance-free zone	Aerial photographs	SHAWP Attachment C	Determined from existing data using GIS.		X				
# Suitable tree cavities within 350 m of shoreline	Locate transects on state land with forested areas greater than 0.4 ha.	SHAWP Attachment D	Determined from existing data using GIS.			X			
# Nest boxes/0.4-ha	Locate transects on state land with forested areas greater than 0.4 ha.	SHAWP Attachment D	Determined from existing data using GIS.			X			
Current velocity	UCB, SAV, and WET station assessments	SHAWP Attachment E	Samples collected at target and reference UCB, SAV, and WET stations (subset sampled daily during HDA field season) and 5 BMP stations (weekly). UCB, SAV and WET sample stations are shown on Figures 3 through 17.				X		
Water depth > ice depth	Remedial activities will not change this variable; conservatively assume that ice depth can be greater than water depth; subindex set to 0.0.	NA	N/A				X		
% Silt in substrate	Sediment data (SSAP)	SSAP-QAPP, Appendices 16 and 17	Determined from existing data using GIS.				X		

Table 5 – Habitat Suitability Index for Non-Fish Species: Data Requirements and Source

Species				Belted Kingfisher	Great Blue Heron	Wood Duck	Snapping Turtle	Muskrat	Mink
Distance to small stream	From Shoreline stations using aerial photographs; topographic maps	SHAWP Attachment E	Determined from existing data using GIS.				X		
Distance to permanent water	Variable set to 1.0; Upper Hudson River is permanent water (distance = 0)	NA	N/A				X		
% Shoreline cover within 1-m	Shoreline stations	SHAWP Attachment G	Data collected from 68 target and reference shoreline stations. Shoreline sample stations are shown on Figures 3 through 17.						
% Canopy cover within 100-m	Calculate at shoreline stations from aerial photographs used for habitat delineation	SHAWP Attachment G	Determined from existing data using GIS.						X

Notes:
1. UCB – unconsolidated river bottom stations
2. SAV – aquatic vegetation beds (also known as submerged aquatic vegetation)
3. BMP – baseline monitoring program
4. SSS – side scan sonar (completed as part of the sediment sampling program)
5. SSAP – Sediment sampling and analysis program
6. HDA – habitat delineation and assessment (BBL, 2003a)
7. SSAP-QAPP – Quality Assurance Project for the sediment sampling and analysis program quality assurance project plan (Environmental Standards and QEA, 2002)

4. Schedule

GE's revised Phase 1 HA Report identified additional habitat assessment data needs for the remaining Phase 1 areas and for Phase 2 areas, including the performance of detailed habitat assessments in the remaining Phase 1 areas and in Phase 2 areas and the collection of data to complete HSI models for certain species. That report stated that habitat assessments in the remaining Phase 1 areas would be conducted following USEPA approval of the Phase 1 DAD Report and the revised Phase 1 HA Report. Since the Phase 1 DAD Report has now been approved, GE proposes to conduct the habitat assessments in the remaining Phase 1 areas, as well as the collection of HSI-related data in those areas and the other investigations proposed in the Phase 1 HA Report, following USEPA approval of the habitat assessment parameters to be measured to support habitat replacement/reconstruction design and the general approach specified in the revised Phase 1 HA Report and this SHAWP. As noted above, the location of some of the remaining Phase 1 stations may need to be modified based on field conditions (e.g., if aquatic vegetation becomes present in a previously unvegetated area), due to changes in dredge areas during the development of dredge prisms, or to capture dominant plant communities in both target and non-dredge areas.

The Phase 1 HA Report also stated that habitat assessments in the Phase 2 areas would be conducted following USEPA approval of the revised Phase 1 HA Report and the Phase 2 DAD Report. However, assuming that the parties agree to defer submission of the Phase 2 DAD Report for some period of time, GE proposes to initiate and if possible complete the habitat assessments in Phase 2 areas, given seasonal constraints as specified in the HDA Work Plan, as well as the collection of HSI-related data in those areas, in the same field season as the remaining Phase 1 areas, following USEPA approval of the habitat assessment parameters to be measured to support habitat replacement and reconstruction design and the general approach specified in the revised Phase 1 HA Report and this SHAWP. As noted above, the locations, type, and/or numbers of the Phase 2 habitat assessment stations may be modified as information regarding areas to be dredged in Phase 2 becomes available (subject to agreement on such areas and numbers by the USEPA and GE); and, following USEPA approval of the Phase 2 DAD Report, additional Phase 2 target or reference stations may need to be added for assessment in the following year. If such data collection is necessary, it will be proposed in an addendum to this SHAWP. Data collected from the remaining Phase 1 areas (electronic and hard copy including Access database and shape files) will be provided in the Phase 1 *Final Design Report*.

Data collected from the Phase 2 areas will be provided in the Phase 2 HA Report, to be submitted to the USEPA 60 days after the later of: (a) completion of the habitat assessment work in Phase 2 areas; or (b) receipt of the Phase 2 habitat assessment data from contract laboratories. In the event that, following USEPA approval of the

Phase 2 DA Report, additional habitat assessment work in Phase 2 areas is necessary to complete the Phase 2 design, the additional data collected from those areas (under the SHAWP addendum mentioned above) will be provided in a supplemental Phase 2 HA Report, to be submitted in accordance with a schedule to be proposed in the addendum to the SHAWP. GE will present the draft site specific FCI models developed for the Hudson River project area to USEPA following collection of the data specified in this program. This presentation is designed to accommodate discussion of the FCI models prior to the submittal of the Final Design Report.

5. References

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