Environmental Compliance Plan

for the

Tappan Zee Hudson River Crossing Project

Revision 5
March 31, 2015

Prepared by

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Document History			
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1.0 Introduction

Tappan Zee Constructors, LLC (TZC) has prepared this Environmental Compliance Plan (ECP) for the New York State Thruway Authority (NYSTA) to comply with the requirements of the Tappan Zee Hudson River Crossing Project (Project) Conformed November 2012 Contract Documents (DB Contract Documents) DB Part 3, Project Requirements Section 3 (DB Contract Documents Section 3); DB Contract Documents Section 107 Legal Relations and Responsibility to the Public (DB Contract Documents Section 107); DB Contract Documents Section 112 and 113,(DB Contract Documents for Quality); and the Environmental Performance Commitments (EPCs).

This ECP is consistent with applicable National Environmental Policy Act (NEPA) and New York State Environmental Quality Review Act (SEQRA) commitments identified in the July 2012 Tappan Zee Hudson River Crossing Project Final Environmental Impact Statement (FEIS) and Section 4(f) Evaluation, September 2012 Record of Decision (ROD) and environmental and permitting commitments specified in the DB Contract Documents Section 3, and Project permit conditions. This ECP supplements and is consistent with applicable sections of the Project's Quality Plan.

This ECP provides a framework for methods that will be employed to achieve environmental compliance, and how that compliance will be controlled, assured, and documented. Specific environmental requirements and controls will be tailored to the various construction sites/activities and will be referenced as appropriate in design and construction documents.

For the purpose of this ECP and associated reporting the following terms are used to describe environmental compliance:

- Incident: A reportable environmental event (e.g. petroleum spill, public complaint);
- Exceedance: A measured value exceeding an established comparable value/limit/quantity (e.g. water quality measurements);
- Non-compliance: Does not comply with permit or plans, as appropiate; and
- Non-conformance: Does not conform with contract or contract required plans, as appropriate.

Part 3 Section 3, Paragraph 3.3.3.1.B.4 requires that this ECP include Quality Assurance (QA) and Quality Control (QC) procedures. These procedures are included with an overview of the program for implementing environmental compliance monitoring activities, and are described in Section 5 – Environmental Compliance Implementation, Tracking and Reporting and Quality Assurance and Section 6 – Procedures for Environmental Compliance Reviews, including:

1. Project description and schedule;

2. Environmental approvals:
    - Identifying changes in the Project design and/or construction means and methods that may:
        - result in environmental impacts greater than those assessed in the FEIS or new impacts not included in the FEIS that would require a new NEPA Re-evaluation; and/or
        - require additional permits/environmental approvals or permit modifications.
    - Achieving NEPA/SEQRA compliance, including performing re-evaluations due to:
        - changes in the Project design and/or construction means and methods; or
        - the implementation of Alternative Technical Concepts (ATCs – see Appendix A for complete list), if adopted in the TZC Project design.
    - Achieving environmental permitting compliance, including obtaining additional environmental

permits required due to:
- o changes in the Project design and/or construction means and methods; or
- o the implementation of ATCs, if adopted in the TZC Project design.

3. Environmental compliance team overview, including environmental team organization, personnel names, titles, and responsibilities of key environmental staff.

4. Environmental compliance implementation, tracking and reporting procedures:

- Communication Protocol
- Meetings
- Environmental Training
- Environmental Checklists
- Environmental Compliance Tracking Database
- Environmental Compliance Reporting
- Environmental Plans
- Reporting Alleged Exceedances and Incidents

The Electronic Laboratory Validation Information System (ELVIS) will be used as the repository for quality records, in addition to Contract Management (CM).

5. Procedures for environmental compliance implementation, tracking and reporting, including those for quality control.

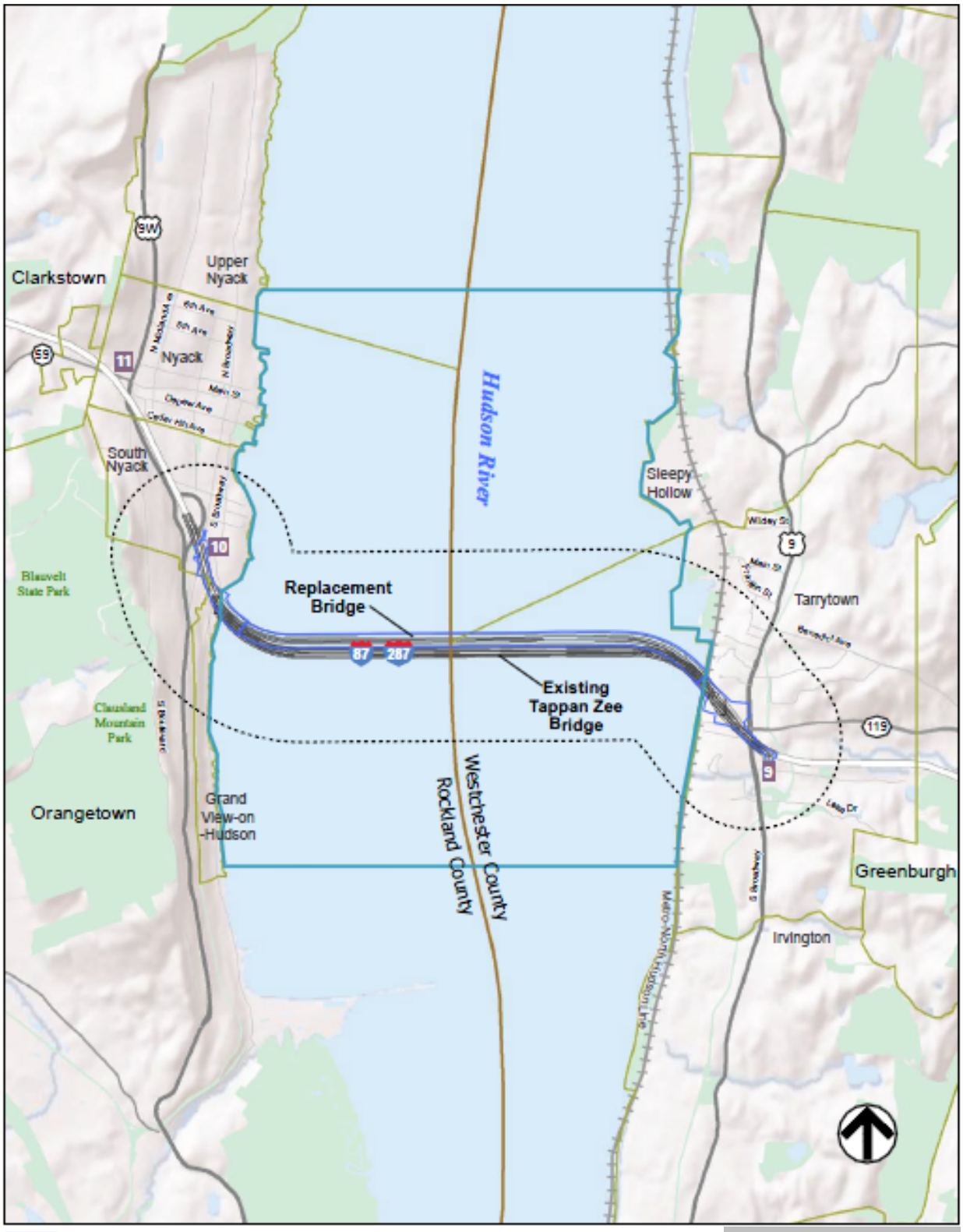
6. Procedures for environmental compliance quality assurance reviews.

2.0 Project Description

The federal lead agency, Federal Highway Administration (FHWA), and NYSTA are sponsoring the Project, which includes the construction of a new bridge crossing, consisting of two parallel bridge structures over the Hudson River between Rockland and Westchester Counties. The Project site is located on the Hudson River (River Mile 27) between the Village of Tarrytown, Westchester County, NY and the Village of South Nyack, Rockland County, NY (see Figure 1, Project Location).

This ECP has been prepared to address the environmental requirements of the proposed construction and demolition components of the Project, including the following:

- Two approach spans and a NYSTA Maintenance Platform that meet landings in Rockland County, and two approach spans that meet landings in Westchester County;
- Two cabled-stayed main spans over the federal navigation channel;
- Waterfront staging areas at the approach span landings and inland construction staging areas;
- Temporary work trestles adjacent to the approach spans near the Rockland and Westchester shorelines;
- Temporary and permanent relocations of NYSTA facilities, and New York State Troopers Barracks within NYSTA's right-of-way (ROW);
- Demolition of the existing Tappan Zee Bridge;
- Dredging operations adjacent to the approach spans, to accommodate construction activities; and
- Potential dredged sediment disposal sites including the Historic Area Remediation Site (HARS) in the Atlantic Ocean and potential upland sites.



Source: Tappan Zee Hudson River Crossing Project FEIS, July 2012

Figure 1 – Project Location

2.1 Construction and Environmental Compliance Schedule

As indicated in the Project's schedule, the anticipated Project construction is approximately 5 years. To accomplish construction completion within the Project schedule, construction activities began on or about

May 9, 2013. Initiation of construction activities required that environmental approvals were completed, including:

- Procurement of applicable permits necessary for construction activities; and
- Completion of the DB Contract Documents Section 3.4. Deliverables, which states that deliverables need to be provided to the Authority by the earlier of: (i) 120 days after Notice to Proceed (NTP – May 18, 2013) or (ii) 30 days prior to the relevant construction activity.

3.0 Environmental Approvals

Final design and construction of the Project must be coordinated with the environmental approvals obtained for the Project, including the Project FEIS and environmental permits. Changes in the Project design and/or construction means and methods or the implementation of ATCs may require re-evaluation of environmental impacts and/or additional environmental permits.

3.1 Design/Construction Review Process

The Environmental Compliance Team (ECT) will coordinate closely with the Design Discipline Leads and Area Managers to identify design changes and new information that could:

(1) result in environmental impacts greater than those assessed in the FEIS or new impacts not included in the FEIS that would require a new NEPA Re-evaluation; and/or

(2) require additional permits/environmental approvals or permit modifications.

The ECT will review designs and planned construction activities prior to work being performed to confirm designs and planned construction methods are consistent with environmental permits and approvals. Design plans will be reviewed during the interdisciplinary review (IDR) process. Planned construction methods will be reviewed during Construction Work Plan (CWP) review. The Environmental Compliance Manager (ECM) or designee is responsible for performing IDR and CWP reviews.

This work process is also described in the Project's Quality Plan Executive Summary (Rev 5, dated October 1, 2014), Section 5.2, Construction Work Plans, "CWPs are developed by TZC Operations prior to the commencement of work," and, among others, are signed off on by the Environmental Compliance Manager (or designee).

Upon identifying a design change that may require additional NEPA review and/or permitting, the ECT will first coordinate with the Design Discipline Lead and Area Managers to make efforts to avoid, minimize, and/or mitigate the new potential environmental impacts. If, after further coordination, the additional NEPA review and/or permitting cannot be avoided, the ECT will notify NYSTA's Environmental Compliance Manager and Oversight Environmental Compliance Monitor (OECM). An environmental review/re-evaluation will be prepared in consultation with FHWA. Following completion of the environmental review/re-evaluation, new permit applications or permit modifications required to accommodate the design change will be prepared in consultation with NYSTA. Consistent with the requirements of DB Contract Documents Section 104-4.4, if the design change will require a new permit, TZC, led by the ECM, will be responsible for obtaining the permit approval or modification in advance of starting any corresponding construction activity.

3.1.1 Design Review

As part of TZC's Design Quality Assurance/Quality Control (QA/QC) process, design package submittals undergo an IDR and Constructability Review (CR) prior to submission of each package. The IDR process involves a review by each engineering discipline (environmental, electrical, mechanical, geotechnical, civil, etc.), regardless of the design document subject. Similarly, the CR process involves a review by applicable TZC Area Managers and construction specialists (marine, environmental, foundations, safety, etc.), also regardless of the design document subject. As part of the QA/QC process, each design package, design report and specification package is reviewed by the ECT to ensure the DB Contract Documents Section 3 EPCs and permitting requirements are incorporated in the Project design documents.

The Design Quality Control process is described similar to the above in the Project's Quality Plan Executive Summary, Section 2.2.1a, "Design Quality Control." Appendix A to the Quality Plan, Design Quality Control Plan (DQCP, dated February 28, 2014) contains further details of this review process.

3.1.2 Construction Review

DB Contract Documents for Quality require that the Design-Builder develop and implement a quality system for all phases of the Project, including environmental compliance. To that end, CWPs are prepared for major construction activities to describe the step-by-step method for performing the planned work. TZC requires activity-specific CWPs to be reviewed and approved by appropriate TZC Area Managers and construction specialists to ensure contractual, safety, proper materials and engineering feasibility and efficiencies are incorporated into the CWP prior to the start of work. CWP reviews are performed by the ECM or designee to confirm construction compliance with environmental permits, approvals and regulatory requirements. Based on CWP and Inspection and Testing Plan (ITP) review, the ECM or designee will prepare, as necessary, construction activity-specific environmental checklists to facilitate and/or document TZC compliance with specific EPCs and/or permit conditions. See section 5.4 of this ECP for further information on environmental checklists.

3.2 NEPA/SEQRA Compliance

To meet NEPA and SEQRA requirements, the FEIS presented two project alternatives that provide an envelope of potential design options and their associated environmental impacts. A ROD summarizing the impacts and mitigation requirements was issued by the FHWA for the Project in September 2012. The FEIS and ROD are publicly available on the Project website: http://www.newnybridge.com/documents/feis/. Changes in the Project design and anticipated construction means and methods or the implementation of ATCs will be re-evaluated in consultation with the FHWA, and in accordance with 6 NYCRR Part 617, 17 NYCRR Part 15, 23 CFR 771.129 and 23 CFR Part 771.130, as necessary, to ensure compliance with NEPA.

3.2.1 NEPA Re-evaluations

A NEPA re-evaluation statement will be prepared in accordance with 23 CFR771.129 as well as 6 NYCRR Part 617 and 17 NYCRR Part 15, for changes in the Project design and/or construction means and methods or the implementation of ATCs to determine whether the conclusions of the FEIS and Joint ROD remain valid or if a Supplemental EIS (SEIS) or any additional environmental analysis is needed.

As provided by FHWA regulations, 23 CFR 771.129:

> After approval of the ROD, Finding of No Significant Impact (FONSI), or Categorical Exclusion (CE) designation, the applicant shall consult with the Administration prior to requesting any major approvals or grants to establish whether or not the approved environmental document or CE designation remains valid for the requested Administration action. These consultations will be documented when determined necessary by the Administration.

As provided by 23 CFR 771.130:

(a) A draft EIS, final EIS, or Supplemental EIS may be supplemented at any time. An EIS shall be supplemented whenever the Administration determines that:

1. Changes to the proposed action would result in significant environmental impacts that were not evaluated in the EIS; or
2. New information or circumstances relevant to the environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS.

(b) However, a supplemental EIS would not be necessary where:

1. The changes to the proposed action, new information, or new circumstances result in a lessening of adverse environmental impacts evaluated in the EIS without causing other environmental impacts that are significant and were not evaluated in the EIS.

NEPA re-evaluation statements will be prepared by NYSTA for NYSTA initiated changes. NEPA re-evaluation statements will be prepared by TZC for TZC initiated changes and reviewed by NYSTA. NEPA re-evaluation statements will also be completed in coordination with FHWA prior to the decision to incorporate the work into the Project. A comprehensive list of re-evaluations for the Project will be maintained.

3.3 Environmental Permitting Compliance

The major Project permits, including U.S. Coast Guard (USCG) Bridge Permit, National Marine Fisheries Service (NMFS) Biological Opinion, U.S. Army Corps of Engineers (USACE) Permit and New York State Department of Environmental Conservation (NYSDEC) Permit have been obtained prior to the start of construction in May 2013. A comprehensive list of environmental permits for the Project will be maintained.

As design changes, construction means and methods changes or implementation of ATCs are proposed, new permits and/or permit modifications will be pursued as necessary. New permits and/or permit modifications related to the Project site will be coordinated through NYSTA, with NYSTA listed as the applicant. New permits and/or permit modifications related to TZC located areas, including staging, borrow and disposal sites and other areas used by TZC in the construction of the Project for its convenience, will be coordinated directly with the applicable regulatory agencies.

4.0 Environmental Compliance Team Organization

4.1 NYSTA Environmental Compliance Oversight Team

NYSTA has retained a team of consultants as the OECM to assist NYSTA's Environmental Compliance Manager and monitor TZC's compliance with and adherence to the EPCs outlined in the Project's FEIS, Joint Findings Statement, ROD, DB Contract Documents and environmental permits and approvals.

Although TZC will be solely responsible for violations of any environmental requirements, the OECM will conduct unannounced inspections for the purpose of verifying compliance and determining whether the TZC's ECT is accurately representing environmental compliance in the reporting documentation described in this ECP and other required environmental plans.

Additionally, Permit Condition #4 of the NYSDEC Permit 3-9903-00043/00012 requires NYSTA to retain an Independent OECM (IOECM) for the duration of the Authorized Activity, and six months thereafter. The IOECM is required to perform the following duties:

A. Be present on-site during all Authorized Activity;
B. Observing and inspecting the Authorized Activity;

C. Reporting to the NYSDEC on a weekly basis (or another frequency to be approved by the NYSDEC) regarding compliance with the NYSDEC Permit and its terms, requirements, and condition; and with the New York State Environmental Conservation Law (NYSECL) and its implementing regulations, where applicable and appropriate; and
D. Reporting noncompliance with the NYSDEC Permit or the NYSECL and its implementing regulations immediately to the NYSDEC, but no later than 12 hours after observation.

NYSTA's Environmental Compliance Oversight Team, presented in Figure 2, has been staffed and organized to meet both the broad Project monitoring requirements and the specific requirements of the NYSDEC Permit.

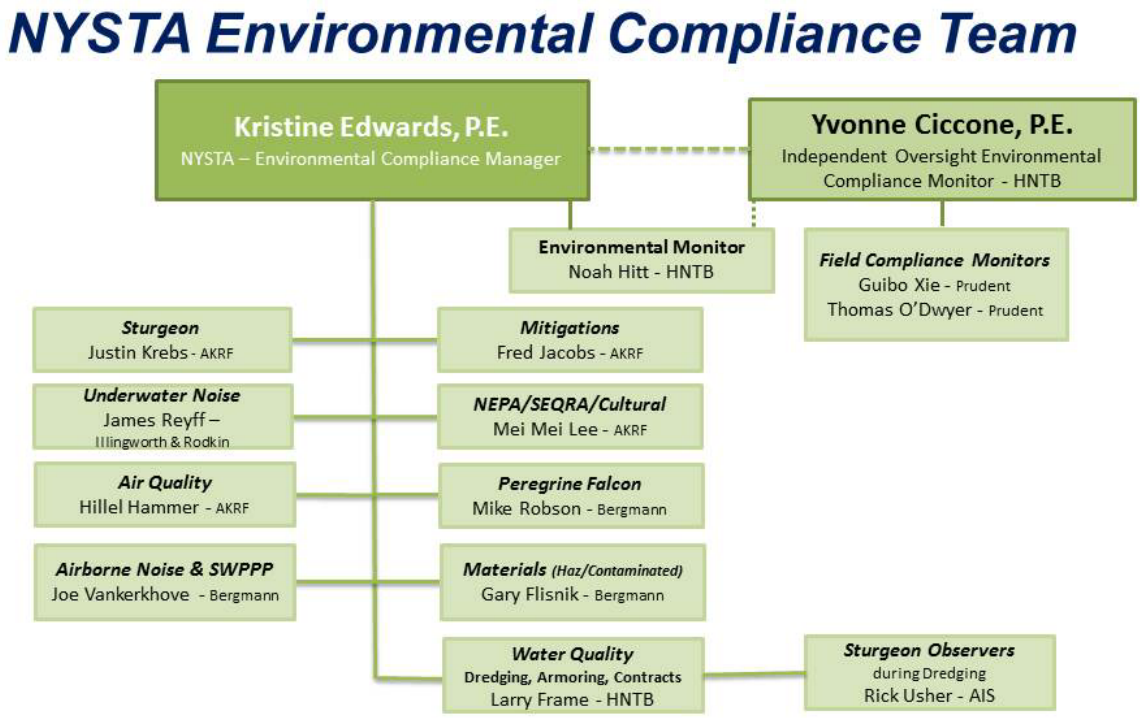


Figure 2: NYSTA Environmental Compliance Oversight Team

4.2 Environmental Compliance Team

TZC has assembled an ECT with specific, regulatory and local knowledge, and appropriate experience to achieve environmental compliance during the design and construction phases in accordance with the DB Contract Documents Section 3, as well as with applicable federal, state, and local permits and approvals.

The ECT is led by the ECM. The ECM will serve as the primary contact for NYSTA's Environmental Compliance Manager, the OECM, the Construction Manager, and federal, state and local regulatory agencies.

The ECM Deputy and Environmental Engineer will coordinate with the individual technical leaders to prepare the environmental plans required per the DB Contract Documents Section 3; update the environmental plans, as needed; and identify, prepare and obtain environmental permits and approvals in advance of construction activities.

The ECM, supported by the ECM Deputies and Environmental Engineer, will oversee the activities related to environmental compliance monitoring and reporting and have the following responsibilities:

- Manage environmental compliance activities during design and construction phases for the Project, including interfacing with regulatory agencies;
- Review, comment and approve environmental reviews, reports, plans, designs, and permit applications;
- Review and approve the incorporation of permit conditions and mitigation requirements into the Project design, DB Contract Documents, and cost estimates;
- Review and audit construction work to ensure environmental compliance with the DB Contract Documents and regulatory requirements;
- Report environmental compliance monitoring activities to NYSTA;
- Identify instances of non-conformances, using those procedures established in the ECP; and
- Report instances of non-conformance to TZC's Project Executive and Manager if imminent stop work order is required.

Key members of the ECT for the construction phase and their responsibilities are presented below (Figure 3). Resumes of the key staff members highlighting their expertise, experience, licenses/ certifications and training are provided in Appendix B to this plan.

The ECT staff will continually review Project conformance with NEPA, SEQRA, applicable regulatory programs/permits and will apply regulatory and local knowledge so that the construction activities meet these requirements.

As noted in the quality control and quality assurance procedures listed in Section 5 & 6, on the construction site(s), Area Managers, Superintendents and Field Engineers of TZC as well as major TZC subcontractors (collectively referred to as "TZC oversight staff") will be responsible for construction activities on-site, coordinating with the ECT staff on-site, and contacting the ECM as environmental-related concerns and compliance issues arise.

The ECT staff and TZC oversight staff will be required to attend the overall environmental compliance trainings described in Section 5.3. The overall environmental compliance training objective is to familiarize the ECT staff and TZC oversight staff with the EPCs, and their responsibilities and requirements included in the environmental plans discussed in Section 5.7 and permit conditions.

5.0 Environmental Compliance Implementation, Tracking and Reporting

5.1 Communication Protocol

The ECM will be the primary environmental point of contact between NYSTA and TZC in an effort to maintain a consistent and clear line of communication. Coordination with NYSTA and TZC involves reviews and discussions of the compliance status of the Project with environmental requirements. NYSTA's Environmental Compliance Manager and OECM will facilitate communication and coordination with NYSTA. Depending on the issue or request, the ECM will involve the appropriate members of the ECT and/or others to prepare an efficient, regulatory compliant response or recommendation.

NYSTA is the permitee for the major Project permits, including the USCG, NMFS, USACE and NYSDEC permits. As such, permit required submittals and correspondence are prepared by TZC and submitted to NYSTA, who in turn, submits to the applicable regulatory agency(ies). In addition, communication of Project information will be provided to the regulatory agencies in coordination with NYSTA. Appendix C contains the regulatory contact list.

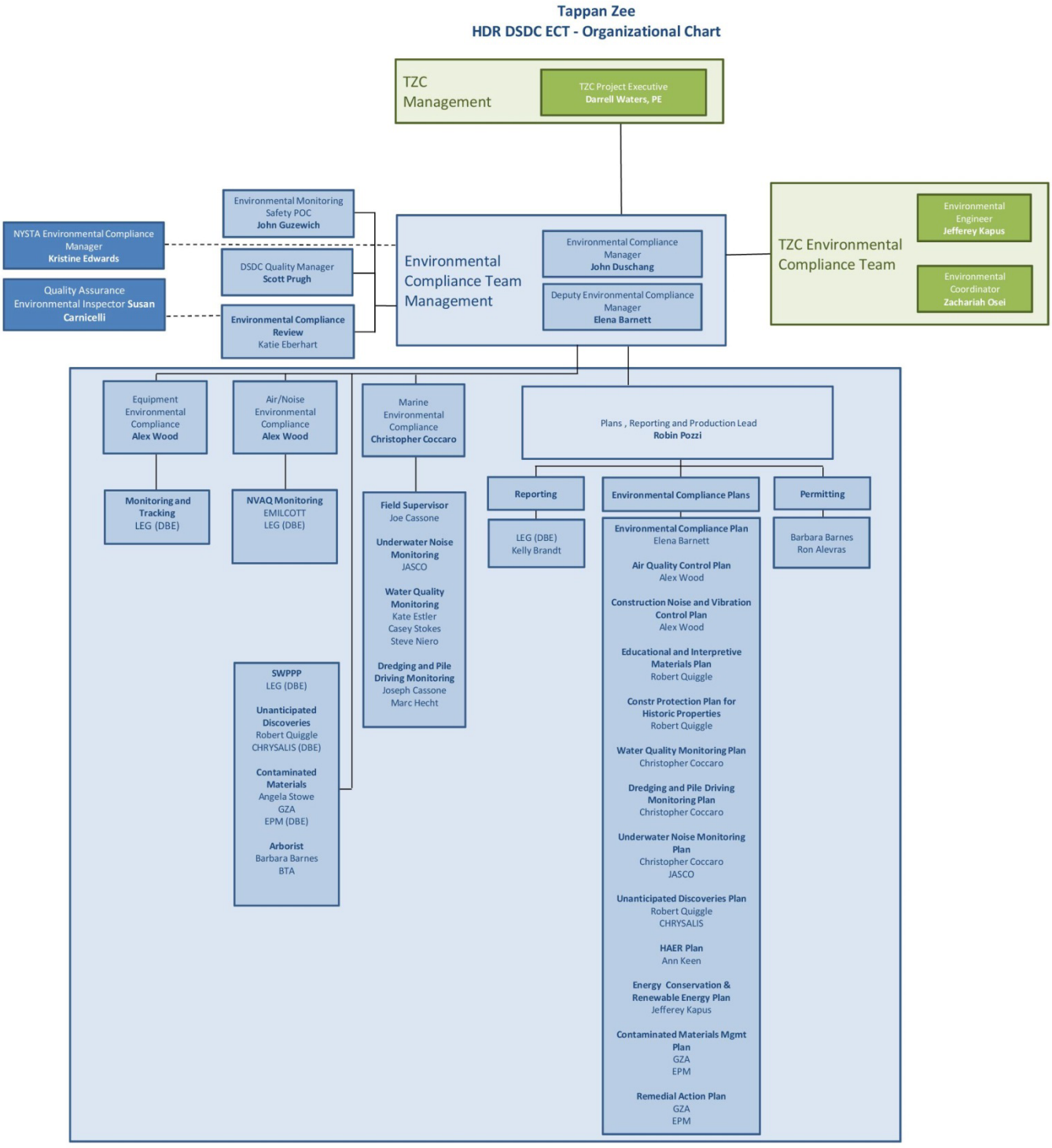


Figure 3: ECT Construction Phase Organization Chart

TZC is the permittee for permits related to TZC located areas, including staging, borrow and disposal sites and other areas used by TZC in the construction of the Project for its convenience. As such, communication, permit required submittals and correspondence will be coordinated directly with the applicable regulatory agency(ies) by TZC.

In some instances, Project information will be provided to Project stakeholders and the public through TZC's Public Involvement Program.

The ECT will compile and disseminate the environmental DB Contract Document requirements (including EPCs), environmental documentation (e.g. FEIS, ROD, SEQR determination) and permit conditions so that TZC staff can incorporate these requirements into the design and construction activities.

Exceedances of EPCs or permit conditions, non-conformance or other environmental incidents, will be reported to the ECM immediately and confirmed with the Construction Supervisor on-site and/or appropriate Project Manager or Area Manager, within one working day. Once the exceedance or noncompliance has been confirmed, the ECM will notify the NYSTA ECM and IOECM immediately. In accordance with the NYSDEC Permit, the IOECM will notify the NYSDEC of all non-compliance with the NYSDEC Permit and NYS Environmental Conservation Law within 12 hours after observation (see Section 5.8).

5.2 Meetings

To effectively advance and coordinate the environmental approvals, the ECT will meet with the OECM and NYSTA representatives on a weekly basis from NTP through 120 days of NTP. Following 120 days after NTP, regular meetings with NYSTA and IOECM will be held to track environmental compliance. These meetings will consist of a review of:

- Action Items
- Documentation
- Upcoming Construction and Required Approvals

5.3 Environmental Training

The ECT provides overall and task-specific environmental compliance training for TZC oversight staff responsible for construction activities. ECT staff will also be required to attend the overall environmental compliance trainings. Overall environmental compliance training will be provided at the commencement of the Project, periodically as new TZC oversight staff joins the Project, as well as on a regular refresher basis as needed.

The overall environmental compliance training objective is to familiarize the TZC oversight staff with the EPCs, environmental plans discussed in Section 5.7 and permit conditions and to inform TZC oversight staff of the implications of environmental requirements upon their daily construction activities. As needed, additional training sessions will be conducted throughout the construction process for new TZC oversight staff, as relevant new information is presented, new construction activities commence and/or the need for additional task-specific training, such as Spill Prevention, Control, and Countermeasures, is identified as a corrective action. Task-specific training will be scheduled in advance of the commencement of work activities so that personnel are trained and well-informed prior to the start of construction.

Personnel involved with contaminated materials will be required to have OSHA 40-hour Hazwoper training, at a minimum, in addition to training and licenses/certifications identified in the Contaminated Materials Management Plan (CMMP).

Environmental compliance training logs for overall and task-specific environmental compliance training, if any, will be provided to NYSTA in the Environmental Compliance Monitoring Reports.

5.4 Environmental Checklists

Based on CWP and ITP review, the ECM or designee will prepare, as necessary, construction activity-specific environmental checklists to facilitate and/or document TZC compliance with specific EPCs and/or permit conditions. Environmental checklists may be warranted for an activity based on the extent and nature of the activity, as well as the compliance documentation deemed necessary by the ECM. Environmental checklists will be intended to document environmental compliance and identify critical environmental controls or checkpoints (CPs) which are required to be in-place prior to work progressing. The environmental checklist will be prepared by the ECT or designee and reviewed and commented on by the TZC Area Manager or designee. Environmental checklist templates will be uploaded to the Project ELVIS once they have been finalized. The environmental checklists will be completed by the TZC superintendent or designee and provided to the ECT. Completed environmental checklists will be uploaded to ELVIS as attachments to Environmental Daily Work Reports (DWRs).

5.5 Environmental Compliance Tracking Database

An Environmental Compliance Tracking Database has been prepared and maintained to track compliance with the EPCs, environmental plans, and permits conditions. The Environmental Compliance Tracking Database identifies the EPCs, environmental plan requirements and permits conditions and the applicable, relavent Project construction activities. The Environmental Compliance Tracking Database will include compliance notes to track environmental monitoring activities, submittals, incidents, exceedances and Environmental Nonconformance Reports (NCRs – The written documentation of deficiencies, instances of noncompliance, errors and/or omissions in the work per DB 105-16 are considered NCRs). Compliance notes will be updated and the Environmental Compliance Tracking Database will be used to generate compliance status reports for the EPCs, environmental plans and permits conditions. Environmental Compliance Tracking Database status reports will be provided to NYSTA as an appendix to the Environmental Compliance Monitoring Report.

5.6 Environmental Compliance Reporting

An Environmental Compliance Monitoring Report will be prepared according to the commitments of the DB Contract Documents Section 3. The Environmental Compliance Monitoring Report will provide an update of the work activities performed during the reporting period related to the following TZC Project documents/activities:

- NEPA Re-evaluations;
- Environmental compliance review;
- Environmental review of construction work plans;
- Environmental compliance training;
- Current and future construction activities;
- Project permits and permit submittals;
- TZC-prepared environmental plans and ECT monitoring activities, including plan submittals and other environmental monitoring documentation;
- Compliance with EPCs, environmental plans, and permits conditions, including Environmental Compliance Tracking Database status reports;
- Compliance with the Project Stormwater Pollution Prevention Plans (SWPPPs), which address the NYSDEC SWPPP controls for construction activities;
- Project incidents, exceedances and environmental NCRs;
- Spill incidents; and
- Public complaints related to environmental compliance.

The Environmental Compliance Monitoring Report will report on the status of each TZC-prepared environmental plan, including:

- The version of the plan (revision number) under which environmental compliance and monitoring is being performed;
- Environmental plans that are undergoing written consultation with NYSTA.

Environmental compliance monitoring activities, observation and results reported in other submittals and environmental monitoring documentation will not be repeated in the Environmental Compliance Monitoring Reports. In these instances, the Environmental Compliance Monitoring Reports will refer to the proper environmental submittals and other monitoring documentation.

Non-conformance reporting occurs in accordance with DB 105-16. NCRs are prepared based on field compliance observations made by the ECT, the ECR team and NYSTA OECM staff. NCRs are reviewed by the appropriate issuing parties to confirm accuracy and assist in identifying root cause. The NCR work flow is provided in Appendix D.

5.7 Environmental Plans

This ECP has been prepared based on the DB Contract Documents Section 3, which identifies specific Project environmental approvals and contract-required environmental compliance plans necessary to be in place to allow the construction activities of the Project to proceed. Relevant environmental plans are due at least 30 days prior to the specific construction activity or within 120 days after NTP. As required by the DB Contract Documents Section 3, EPCs and NYSDEC Permit conditions, the following environmental plans have been prepared by TZC to address construction and demolition activities of the Project:

(1) Spill Prevention, Control, and Countermeasures Plan
(2) Contaminated Materials Management Plan
(3) Construction Noise and Vibration Control Plan
(4) Air Quality Control Plan
(5) Dust Control Plan
(6) Rodent Control Plan
(7) Lead Compliance Plan
(8) Project-Generated Waste Management Plan
(9) Construction Protection Plans for Historic Properties
(10) Educational and Interpretive Materials Plan
(11) Unanticipated Discoveries Plan
(12) Dredge Materials Management Plan
(13) Dredging and Pile Driving Monitoring Plan
(14) Underwater Noise Monitoring Plan
(15) Water Quality Monitoring Plan
(16) Energy Conservation and Renewable Energy Plan
(17) Remedial Action Plan (RAP)
(18) Peregrine Falcon Protection Plan

The Cultural Resources Protection Plan was superseded with four cultural resource protection activities, as discussed below, including: Historic American Engineering Record (HAER), Construction Protection Plans for Historic Properties, Unanticipated Discoveries Plan and Educational and Interpretive Materials Plan. The Ecological Management Plan was superseded with activity-specific plans, as discussed below. In addition, the Hazardous Waste Operations Health and Safety Plan, Environmental Health and Safety Plan and the Construction Health and Safety Plan required per the DB Contract Documents Section 3 have been incorporated into TZC's overall Health and Safety Plan for the Project and therefore are not discussed below. In addition, environmental plans prepared by NYSTA Environmental Compliance Oversight Team and environmental mitigation requirements being performed by the Environmental Compliance Oversight Team are not discussed below.

Brief highlights of the TZC prepared environmental plans are provided below; however, refer to the plans individually for further details on environmental plan-specific activities and documentation, including:

- the means and methods to be used by TZC to comply with the EPCs and permit conditions;
- plan submittals to be provided to NYSTA through document controls;
- the purpose and frequency of ECT field monitoring activities;
- environmental exceedance reporting requirements;
- forms to be used to document ECT field monitoring observations and to be provided to NYSTA through ELVIS; and
- other environmental documentation to be provided to NYSTA through ELVIS, if any.

In addition, each environmental plan will include a responsibility matrix summarizing the following:

- the party that will implement the EPCs, environmental plans and permit conditions;
- the responsible party for the EPCs, environmental plans and permit conditions and supporting documentation; and
- the responsible party for conducting environmental performance reviews (reviews will confirm compliance with the EPCs, environmental plans and permit conditions), and supporting environmental performance review documentation.

In an effort to protect and accommodate local community life during construction of the Project, TZC will actively maintain a clean and orderly work site according to DB Contract Documents Section 3 Exhibit B Item 14. The ECT will actively monitor the construction activities' environmental compliance with EPCs, environmental plans and permit conditions and will track such compliance in the Environmental Compliance Tracking Database described earlier. In addition, the ECT will perform general land and/or marine environmental field monitoring inspections. These general environmental inspections will be performed not for the purpose of determining compliance with one specific environmental plan, but rather to document compliance with multiple applicable environmental plans. These general environmental inspection observations will be documented by the ECT in an Environmental Compliance Field Report that will be provided to NYSTA through ELVIS.

5.7.1 Environmental Plan Highlights

Spill Prevention, Control, and Countermeasures Plan (SPCC Plan)

An SPCC Plan has been developed to address the requirements of the federal Oil Pollution Prevention Regulations, commonly referred to as the SPCC Rule. This SPCC Plan establishes oil spill preparedness, prevention, planning, response, and notification procedures as set forth in these regulations. This SPCC plan also addresses state-specific oil spill reporting notification and response requirements.

Contaminated Materials Management Plan (CMMP)

The CMMP presents methods to be employed to handle, mitigate, transport, and dispose of contaminated materials encountered as part of the construction Project including contaminated soils, contaminated groundwater, asbestos-containing materials, and PCB-bearing materials. The CMMP will include a description of the potential contaminated materials expected to be encountered during the Project, a quality management plan, a sampling and analysis plan to evaluate whether the materials are contaminated, a field sampling plan presenting field sample collection methods, a review of appropriate regulatory standards, sample handling requirements, data quality objectives, data reduction, validation and reporting requirements, proposed disposal facility descriptions and permits, stockpiling procedures, and transportation requirements.

The CMMP will present a detailed approach to characterize soils for disposal purposes and/or for reuse within the Project limits. Soil wastes will be managed in accordance with local, state and federal regulations.

Construction Noise and Vibration Control Plan

A Construction Noise and Vibration Control Plan has been developed to address specific construction activities, and identifies the means and methods that will be used to abate noise and vibration impacts during construction in accordance with the Project construction noise and vibration EPCs.

Air Quality Control Plan

The Air Quality Control Plan has been developed to address specific construction activities, and identifies the means and methods that will be used to minimize and avoid air emissions during construction in accordance with the Project construction air quality EPCs.

Dust Control Plan

A Dust Control Plan has been developed to address specific construction activities, and identifies the means and methods that will be used to abate potential dust impacts during construction.

Rodent Control Plan

A Rodent Control Plan has been developed to address specific construction activities, and identifies the means and methods that will be used to control rodents during construction.

Lead Compliance Plan

A Lead Compliance Plan has been developed to address specific construction activities, and identifies the means and methods that will be used to abate lead-based paint impacts during construction and demolition.

Project-generated Waste Management Plan

A Project-generated Waste Management Plan has been developed to provide procedures and processes to reduce, recycle and/or properly dispose of Project-generated construction waste materials and other wastes during construction activities, including: proper use and maintenance of dumpsters, containers, garbage bins, and recycling bins, and reuse of excavated materials.

Cultural Resource Protection

The plans prepared for Cultural Resources Protection outline a programmatic approach to determining the appropriate measures to minimize or mitigate Project-related effects to historic, archaeological and cultural resources in coordination with the New York State Office of Parks, Recreation and Historic Preservation (NYSHPO) and other applicable parties. Per the Section 106 Memorandum of Agreement (MOA), there are four cultural resource protection activities which TZC is responsible for implementing: HAER recordation, Construction Protection Plans for Historic Properties, Unanticipated Discoveries and Educational and Interpretive Materials.

> HAER. HAER recordation of the existing Tappan Zee Bridge will be performed by qualified staff as a mitigation method as prescribed in the EPCs and Project MOA. HAER recordation will include conducting photography sessions of the existing Tappan Zee Bridge, historical research and data collection.
>
> Construction Protection Plans for Historic Properties. An overarching Resource-Specific Historic Resources Plan encompassing the identified historic properties was prepared identifying vibration minimization measures, for example, assigning truck routes avoiding the resource, avoidance/minimization of high-impact equipment in the vicinity, and other vibration control measures. In addition, resource-specific construction protection plans for historic properties within

the River Road Historic District and the potential vibration settlement zone (300 feet of Project Limits) have been prepared identifying construction protection measures to be utilized during construction. Resource specific plans were prepared for the following individual historic properties:

- 26 River Road
- 24 River Road
- 22 River Road
- 21 River Road
- 13 River Road
- 3 River Road
- 78 Smith Avenue
- 10 Ferris Lane

Unanticipated Discoveries. An Unanticipated Discoveries Plan was prepared outlining necessary training for Project personnel and protocols for the inadvertent discovery of archaeological resources and the treatment of human remains identified within the Project area. Unanticipated discoveries training will be a component of the overall environmental compliance training and will be conducted by a professional archeologist.

Educational and Interpretive Materials. The Educational and Interpretive Materials Plan outlines the processes for documenting the history and engineering significance of the Tappan Zee Bridge. The documentation will include written, graphic, and/or electronic media to be provided to local libraries, historical societies, and educational institutions, as well as interpretive exhibits presenting the history and engineering of the Tappan Zee Bridge, to be located on the Project's shared-use path.

Dredge Materials Management Plan

A Dredge Materials Management Plan was developed to provide the means and methods to be used during dredging and armoring activities within the Hudson River. The Dredged Materials Management Plan has been superseeded by the Dredging Plan and the Armoring Plan. The Dredging Plan has been developed to provide the means and methods to be used during dredging activities within the Hudson River. The Armoring Plan has been developed to provide the means and methods to be used during armoring activities within the Hudson River.

Dredging and Pile Driving Monitoring Plan

This plan covers sturgeon monitoring during dredging and pile driving (4 feet diameter or greater piles) and is prepared according to the Pile Driving, Dredging, and Fish Monitoring During Construction conditions of the NYSDEC Permit, the NMFS BO, and DB Contract Documents Section 3.

Underwater Noise Monitoring Plan

Prepared to address monitoring underwater noise levels for the protection of sturgeon according to the Pile Driving NYSDEC Permit conditions, NMFS BO, and DB Contract Documents Section 3.

Water Quality Monitoring Plan

Prepared according to Water Quality conditions of the NYSDEC Permit conditions, NMFS BO, and DB Contract Documents Section 3. The plan covers environmental compliance monitoring related to water quality.

Energy Conservation and Renewable Energy Plan

An Energy Conservation and Renewable Energy Plan has been developed to provide guidelines to reduce energy consumption by incorporating energy efficient design and minimizing unnecessary waste of construction materials in accordance with the FEIS and DB Contract Documents Section 3.

Remedial Action Plan (RAP)

A RAP has been prepared to outline appropriate remedial actions to address known and potential environmental conditions encountered during construction in accordance with state and federal remediation regulations.

Peregrine Falcon Protection Plan

A Peregrine Falcon Protection Plan has been prepared to protect an existing peregrine falcon nest on the existing Tappan Zee Bridge. This plan describes the implementation of protocols developed by NYSTA, NYSDEC and NYCDEP for minimizing disturbance to bridge-nesting peregrine falcons during construction and demolition for the Project to the greatest extent possible during the February through August nesting period.

5.8 Reporting Alleged Exceedances and Incidents

Environmental plans will identify the applicable construction activities and monitoring procedures to confirm compliance including the specific items to be reviewed or locations to be inspected, the inspection to be employed (i.e. visual, auditory, testing by instrument), and acceptability criteria to be applied by the ECT staff. Refer to the individual environmental plans for documentation to be prepared to report on compliance with the EPCs, environmental plans and permit conditions.

Exceedances of EPCs or permit conditions, or other environmental incidents, will be reported to the ECM immediately and confirmed with the TZC Superintendent on-site and/or appropriate Area Manager or Field Engineer, within one (1) working day. Once the exceedance or noncompliance has been confirmed, the ECM will notify the the NYSTA ECM and IOECM immediately. In accordance with the NYSDEC Permit, the IOECM will notify the NYSDEC of all non-compliance with the NYSDEC Permit and NYS Environmental Conservation Law within 12 hours after observation.

Exceedances, incidents and resolutions will be tracked in the Environmental Compliance Tracking Database, as mentioned earlier. The Environmental Non Conformance Report Workflow is provided in Appendix D. Specific environmental exceedances will be reported and resolved in accordance with the protocols of the applicable environmental plan.

6.0 Procedures for Environmental Compliance Reviews

6.1 Overview

As previously discussed, environmental plan implementation and related submittals will be subjected to the environmental compliance review processes that will be conducted by qualified professionals following the audit procedures described below. The audits will check that environmental compliance monitoring and reporting is occurring according to EPCs, environmental plans and permit conditions.

6.2 Environmental Compliance Monitoring Review Process

6.2.1 Objective

This ECP requires the implementation of an environmental compliance review program (ECRP) for auditing the ECT's monitoring activities and deliverables. The objective of this program is to ensure the ECT is performing in accordance with the EPCs, environmental plans and permit conditions. The program will allow for observation, reporting and documentation of the ECT's environmental compliance monitoring of in-field activities, as well as review the completeness, quality and timely submittal of required documentation and reports. The environmental compliance review policies and procedures are established and maintained in accordance with the provisions of this Section.

6.2.2 Scope

This section applies to environmental compliance review audits (ECRA) that will be conducted on various environmental plan(s). The audits will include desktop audits as well as in-field audits, to confirm that the ECT's environmental compliance monitoring procedures are performed as described in each environmental plan. The audit will review the various environmental plan(s) activities, documentation, reporting and deliverables submitted during the reporting period.

6.2.3 Environmental Compliance Review Protocol

The ECR and ECRA will be in accordance with the following:

- The ECR will objectively conduct ECRAs.
- The ECR assigned to the task will:
  - Be an environmental professional with at least 10 -20 years experience in environmental compliance.
  - Have experience or training commensurate with the scope, complexity or special nature of the activities being audited.
  - Be independent of the activity being audited:
    - The ECR cannot be dedicated to the Project full time, and
    - The ECR cannot have prepared or performed quality reviews of the environmental documents.
- The ECR may inform the ECM of the pending audit.
- ECRA results will be reviewed by ECT management and the Project Director to assess compliance and effectiveness.
- The audit results will be uploaded to ELVIS once finalized.

6.2.4 Responsibilities

The ECR will be responsible for:

- Scheduling and objectively conducting ECRAs;
- Reviewing Project files to confirm documentation, reporting and deliverables are generated at the frequency (daily/weekly/monthly/quarterly) required in their respective plans and are submitted to NYSTA accordingly;
- Completing all elements of the ECRA or assigning a designee;
- Documenting the ECRA in a quarterly audit report;
- Documenting and discussing the results of the ECRA with the Environmental Compliance Technical Leaders responsible for the technical program being audited; and
- Confirming the agreed upon corrective actions have been implemented.

The Environmental Compliance Technical Leaders for the program being audited will be responsible for investigating, planning and implementing, in a timely manner, any corrective action agreed upon as a result of an ECRA.

A detailed discussion of the protocols described above is provided in the *ECRA Performance* section provided below.

6.2.5 Environmental Compliance Review Audit Activities

Planning and Scheduling

The ECR or designee will perform an ECRA, on a regular basis (bi-monthly, quarterly or as appropriate, depending on the level of activity), of the various plan(s) activities. The audit will review the documentation, reporting and deliverables generated and/or submitted during the audit period. See Appendix E for the ECRA schedule.

Audit Personnel

If additional ECRA staff is required, the ECR will provide the necessary training to ensure that their audit activities are performed in accordance with the appropriate policies and procedures. This training will include reviewing the ECP and specific environmental monitoring plan being audited.

Environmental Compliance Review Audits

The environmental plans that will be included in the ECRAs are:

- Environmental Compliance Plan
- SPCC Plan
- Water Quality Monitoring Plan
- Underwater Noise Monitoring Plan
- Dredging and Pile Driving Monitoring Plan
- Construction Noise and Vibration Control Plan
- Air Quality Control Plan
- Dust Control Plan
- CMMP
- Construction Protection Plans for Historic Properties

In addition, an ECRA will be performed of the ECTs compliance with the Project SWPPPs and other general ECT monitoring in accordance with Project requirements.

The ECR will review Project files to confirm documentation, reporting and deliverables are generated at the frequency (daily/weekly/monthly/quarterly) required in their respective plans and are submitted to NYSTA accordingly. The ECR will also review document files, including document checks and reviews, to confirm reports and deliverables undergo appropriate quality control review prior to submittal.

The objective of the ECRA conducted by the ECR will be to confirm that:

- The required ECT monitoring activities have been performed according to applicable construction activities and environmental plans;
- The ECT documentation has been prepared according to applicable environmental plan requirements; and
- The ECT documentation has been submitted on schedule, in accordance with the applicable environmental plans.

The ECR may reference the following Project documents during the environmental compliance review:

- Applicable EPCs, environmental plans and conditions;
- Project reporting and deliverables schedule; and
- Construction activity schedule.

Environmental Compliance Review Audit Performance

The ECR or designee will follow these steps during each ECRA:

(1) Collect the appropriate deliverables for the period from which the audit is occurring;
(2) Confirm the construction activities for this period;
(3) Complete the ECRA Checklist Form (Appendix E) to confirm:
    a. the required environmental compliance monitoring occurred per construction activity.
    b. the proper compliance document or form(s) have been prepared per construction activity.
    c. the compliance document or form(s) were completed at the proper frequency (e.g., daily, weekly, monthly, quarterly) per construction activity; and
    d. compliance document or form(s) were submitted according to schedule.
(4) Sign the ECRA Checklist Form with signature and date.
(5) Save the ECRA documentation to the Project ECRA Checklist Folder in ProjectWise.
(6) Generate an ECRA Results form reporting any non-conformance (NCR) issues identified during each audit.
(7) Send the ECRA Results form to the ECM and the Technical Environmental Compliance Lead, identified with each Project activity, for discussion and resolution of the NCR issue(s) documented in the report.
(8) Report inconsistencies and missing documentation in an ECRA Results Report submitted to the ECM and the Project Director on a quarterly basis.

The ECR may schedule in-field ECRAs as needed. These audits will serve to confirm the ECT's compliance with field monitoring activities according to a specific environmental plan. The frequency of these audits will be determined by current construction activities.

The ECR or designee will complete the specific environmental review audit checklist for each monitoring plan while in the field observing activities. The audits may also include a review of equipment calibration, sample handling, chain-of-custody protocols, documentation of field activities (e.g., field data sheets), analytical results and filing of final data reports.

Environmental Review Audit Response and Follow-up

ECRA Results Reports that confirm the ECT's conformance with the environmental plans will be signed by the ECR and reviewed with the ECM and Environmental Compliance Technical Leaders. The Final ECRA Results Reports will be uploaded to ELVIS by the last day of the month following the reporting period.

Upon receiving an ECRA Results Report that notes deficiencies in ECT documentation, reporting and/or field monitoring (See Appendix E for the ECRA Checklist Form), the ECT designee will respond in writing with the following information:

- The cause of the deficiency;
- The corrective action(s) being taken;
- The responsibility for corrective action; and
- When corrective action will be completed.

The ECR, in consultation with the ECM, will either approve or reject the ECRA response(s). Corrective actions will be reviewed through written communication and/or additional ECRAs. Deficiencies and non-compliance with environmental plans will be documented by the ECR in written NCRs. Upon successful closure of an ECRA, copies will be sent to the ECM for review and approval. The ECRA Results Reports will be uploaded to ELVIS once they have been finalized.

APPENDIX A
APPROVED ALTERNATIVE CONCEPTS (ATCS)

Value Engineering – Alternative Technical Concepts (ATCs)

ATC Name	Description	Response
ATC-#02 - Profile Modification - Symmetrical 1.49% Main Span Approach Profile Grades	Vertical profile of the Rockland approach would be begin at -0.77% and transition to +1.49% until the midpoint of the main span. The Westchester approach would begin at a grade of -0.30% percent at the abutment and transition to a +1.49% creating a symmetrical vertical grade about the midpoint of the main span.	*Approved*
ATC-#4 - [redacted] Galvanized Reinforcing Bars	Use of ASTM A 615 [redacted] galvanized (ASTM A 767 Class I coating) reinforcing bars in addition to the reinforcing bars specified in the RFP anywhere on the project.	*Approved*
ATC-#06 Rockland Median Widening	Widen the I-287/I-87 median at the Rockland landing an additional 2 feet from what is shown in the Indicative Plans in order to accommodate Future Potential Loading. The Proposer also would like to consolidate the eastbound and westbound maintenance ramps into one central maintenance ramp within the median.	*Conditionally Approved*
ATC-#10 Elimination of Permanent Intermediate Diaphragm	Eliminate the installation of permanent intermediate diaphragms between adjacent precast concrete girders.	*Not an ATC, can be used in Proposal*
ATC-#11 Toll Plaza Approach Taper	Reduce the toll plaza taper length from 970 feet to 464 feet creating a 1:8 toll plaza taper.	*Conditionally Approved*
ATC-#12 Toll Plaza Lane Configuration	Provide seven mixed-mode lanes and two ORT lanes for toll plaza operations during the early phases of the project construction. This scheme would also be implemented during the construction of the new toll plaza.	*Conditionally Approved*
ATC-#13 Toll Plaza Approach Barrier Length	Removal of the 750 foot constant bridge width and concrete median barrier installation between the three ORT lanes and the two traditional toll plaza lanes on the Westchester approach to the toll plaza.	*Conditionally Approved*
ATC-#14 Toll Plaza Guard Antennas	Use of Guard Antennas during construction of the of the new toll plaza to resolve the issue of EZ Pass interference between the temporarily offset new and existing toll plazas.	*Conditionally Approved*
ATC-#16 Dock Platform & Dry Dock Facility	Replace the dry dock facility with either a shiplift system or gantry cranes capable of allowing the maintenance of vessels out of the water. This facility would be located at the easternmost end of the dock.	*Not an ATC, can be used in Proposal*
ATC-003 Use of Existing Bridge for Temporary Access Trestle	Use of a temporary access trestle that is supported on beams spanning between existing bridge foundations for the causeway portion of the existing bridge.	*Conditionally Approved*
ATC-005 Eliminate Dredge Prism Armoring	Use of shallow draft tug boats and 3:1 dredging channel side slopes in lieu of installing 450,000 CY of armor material along the dredging channel.	*Conditionally Approved*
ATC-006 Dredge Prism Slope Reduction	Use of 3:1 access channel slide slopes rather than the 10:1 side slopes specified in the RFP along the dredging channel.	*Conditionally Approved*
ATC-008 Rockland Approach Spans - Constant 36' Minimum Median	Provide a constant 36 foot minimum median between the eastbound and westbound Rockland approach bridges through to the Rockland Landing abutment.	*Conditionally Approved*
ATC-009 Use of High Strength Reinforcing Bars in Foundations	Use of ASTM A 615 [redacted] galvanized (ASTM A 767 Class I coating) reinforcing bars in addition to the reinforcing bars specified in the RFP for foundation design.	*Approved*

ATC Name	Description	Response
ATC-010 Floating Caisson Removal/Demolition	Demolition of existing caissons [redacted] using a combination of chopper beams, hydraulic shears, and hydraulic hammers in order to collapse the structures into themselves. Demolished material would remain within the void spaces below the river bottom mud line.	***Conditionally Approved***
ATC-011 Use of a Combination of Post Tensioning Bars and Strands in Precast Concrete Columns	Use of precast concrete column segments which would be secured to the pile caps using a combination of galvanized or stainless steel ASTM A722 [redacted] post tensioning bars and ASTM A416 270 ksi Low-Relaxation Prestressing Steel Strands.	***Not an ATC, can be used in Proposal***
ATC-012 Use of Post Tensioning Bars	Use of ASTM A722 galvanized or stainless steel post tensioning bars for precast concrete piers having an ultimate stress of [redacted]	***Not an ATC, can be used in Proposal***

APPENDIX B
ENVIRONMENTAL COMPLIANCE TEAM RESUMES

John Duschang

Environmental Compliance Manager

EDUCATION

B.S., Fisheries Sciences, University of Vermont

REGISTRATIONS

N/A

CERTIFICATIONS

- OSHA 40-hour
- HAZWOPER training with annual refreshers
- Adult CPR and Standard First-aid
- American Fisheries Society, Member

PROFESSIONAL MEMBERSHIP

N/A

Mr. Duschang is a Senior Project Manager and responsible for managing and directing HDR's New York Environmental Permitting and Compliance staff. He has over 18 years of demonstrated experience in the environmental permitting process and associated requirements, environmental design, and construction management and compliance on large, complex transportation and other infrastructure projects in environmentally sensitive areas, including the Hudson River. He has direct experience in preparing permit applications, performing permit compliance monitoring and ensuring environmental commitments established during federal and state project reviews, including National Environmental Policy Act (NEPA) Environmental Impact Statements (EIS) and State Environmental Quality Review Assessments (SEQRA).

Mr. Duschang has overseen and managed environmental compliance staff on a variety of design and constructionrelated issues, including stormwater pollution prevention plan compliance, erosion and sediment controls, protection of endangered species, dredging and dredged material handling and wetland protection, monitoring and mitigation. He has worked with multi-disciplinary engineering design teams and construction staff to resolve constructability and permit restriction issues, reviewed highway, bridge and utility engineering drawings and concepts to confirm permit compliance, and has negotiated and provided science-based, defensible recommendations for monitoring and mitigating potential adverse effects associated with various transportation and infrastructure projects, as related to New York State Protection of Waters (Article 15), Tidal Wetlands (Article 25) and 401 Water Quality Certificate Programs; and U.S. Army Corps of Engineers (USACE) Section 10 (River and Harbors Act) and Section 404 (Clean Water Act) permits; U.S. Coast Guard Section 9 (Bridges) permits; NOAA Fisheries Section 305(b)(2) of the Mansuson-Stevens Fishery Conservation and Management Act essential fish habitat (EFH) assessments; and U.S. Fish and Wildlife Service Section 7 Consultations.

RELEVANT EXPERIENCE

Bayonne Bridge Navigational Clearance Program (BBNCP), Bayonne, New Jersey/Staten Island, New York, Port Authority of New York & New Jersey – Environmental Screening and Alternatives Analysis Project Manager (2010–2011). Mr. Duschang was the Project Manager for the Environmental Screening and Alternatives Analysis. In this role, Mr. Duschang identified and removed from further consideration those alternatives that did not meet the established Purpose and Need of the BBNCP and to provide a basis for the future environmental analysis of select alternatives under NEPA requirements. HDR assessed

environmental impacts relative to regulatory permitting requirements and aquatic impacts for several alternatives, particularly for bridge replacement and rehabilitation options. The study also identified right-of-way constraints, navigation requirements, environmental considerations (dredged material disposal, wetlands, endangered species), permit requirements, costs and construction feasibility. Currently, Mr. Duschang is the Environmental Permitting QA/QC Lead for the engineering design team.

Champlain Hudson Power Express, Hudson River, New York, Transmission Developers Inc. – Environmental Lead (2008–Ongoing). Mr. Duschang serves as the Environmental Lead for submarine cable siting and advises on regulatory permit requirements for this proposed 1,000 MW HVdc underwater and underground transmission cable from the U.S.-Canada border to the New York Metropolitan area via Lake Champlain and the Hudson River. Mr. Duschang was responsible for conducting the pre-feasibility and evaluating potential impacts to environmentally-sensitive areas within the Hudson River, navigation, commercial fisheries, and water quality due to re-suspension of sediments and contaminants. Currently, Mr. Duschang is working with the engineering team to develop the Environmental Management and Construction Plan on in-water work standards, that will be acceptable to federal and state agencies for ensuring permit compliance.

Neptune Regional Transmission System, Hempstead, New York/Sayreville, New Jersey, Prysmian Cables and Systems – Environmental Permit Manager (2001–2007). Mr. Duschang successfully negotiated environmental permit conditions with federal and state agencies and local officials in New York and New Jersey, including the New York State Department of Environmental Conservation (NYSDEC), New Jersey Department of Environmental Protection (NJDEP), National Marine Fisheries Service (NMFS) and the U.S. Army Corps of Engineers (USACE).

Immediate Rehabilitation and Repair of Greenville Yard Lift Bridge, Jersey City, New Jersey, Port Authority of New York & New Jersey – Project Manager (January 2012–December 2012). The PANYNJ is currently advancing the Cross Harbor Freight Program, with the goal of improving goods movement throughout the region. As part of this program, PANYNJ is undertaking several immediate freight network improvements in various locations in New York and New Jersey, including the Greenville Yard located in Jersey City, NJ. Due to deteriorated conditions, the PANYNJ are pursuing immediate repairs to an existing lift bridge at the site. Mr. Duschang was responsible for environmental permits.

Elena Barnett

Deputy Environmental Compliance Manager

EDUCATION

M.S., Environmental Engineering, Northwestern University, 1998

B.S. Environmental Engineering, Manhattan College, 1997

REGISTRATIONS

EIT, NY, 2004

INDUSTRY TENURE

16 Years

Ms. Barnett is a Vice President and director of the environmental planning group for HDR. Ms. Barnett has over 15 years of environmental planning experience in the preparation of federal and state-required environmental documents for solid waste, transportation, development and infrastructure projects. Ms. Barnett is also responsible for the acquisition of environmental permits and approvals for a diverse number of projects. She has led numerous environmental evaluations in conformance with State Environmental Quality Review Act (SEQRA), City Environmental Quality Review (CEQR) and National Environmental Policy Act (NEPA) requirements and has managed a wide range of on-call indefinite quantity contracts for public clients in the New York region.

RELEVANT EXPERIENCE

New York City Economic Development Corporation On-Call Planning Services Contract. Ms. Barnett served as Deputy Contract Manager for the pervious on-call planning services contract (2007) and currently serves as Contract Manager for the existing on-call planning services contract for the New York City Economic Development Corporation.

New York City Economic Development Corporation, Taxi Medallion EIS. Ms. Barnett served as Project Manager for the preparation of an EAS and EIS for the New York City Taxi and Limousine Commission (TLC) Taxi Medallion project. The environmental review was conducted pursuant to the State Environmental Quality Review Act (SEQRA) and City Environmental Quality Review (CEQR) procedure, including conformance with Executive Order 91, the regulations implementing CEQR, and the guidance provided in the CEQR Technical Manual (2010).

New York City Economic Development Corporation, Brush Avenue. Ms. Barnett served as Project Manager for the development of restoration plans and a cost estimate for the Brush Avenue site in the Bronx, NY. The restoration plans identified the limits of trash and debris to be removed from the wetlands along the shoreline of Westchester Creek and the limits of excavation for a portion of the site that was created by illegal filling with the adjacent area, while maintaining a stable slope running toward the waterfront through the use of erosion control fabric, staking and plantings.

Bayonne Bridge Navigational Clearance Program (BBNCP). Ms. Barnett served as environmental lead for the preparation and coordination of all BBNCP environmental permits; including from the USCG, USACE, NJDEP, NYSDEC, NYCDPR, City of Bayonne and NYCDEP. In addition, Ms. Barnett is leading the effort for obtaining traffic permits and approvals from various transportation agencies including NJDOT, NYSDOT and NYCDOT. In all, Ms. Barnett's efforts led to the successful completion of nearly 40 permits and approvals in total.

Webster Avenue Rezoning EIS. Ms. Barnett managed the preparation of several sections of the recent EIS prepared to analyze land use and zoning along a 1.75 mile stretch of Webster Avenue in the Bronx, from Fordham Road to E 211th Street. HDR's specific tasks included the assessment of hazardous materials, natural resources, waterfront,

infrastructure, solid waste and sanitation, energy and public health. The assignment was administered through the NYCDCP On-Call contract in which Ms. Barnett serves as Contract Manager.

Third Avenue/Tremont Avenue Rezoning EAS. Ms. Barnett managed the preparation of several sections of the recent EIS prepared to analyze the rezoning of a portion of the Bronx within Bronx Community District 6. The study area was bound by Fordham Plaza in the north, extending to 3rd Avenue at 175th Street to the south, and including much of the area south of Fordham Plaza between Washington Avenue and 3rd Avenue. There was an additional east-west corridor along Tremont Avenue between Daly Avenue on the east and Webster Avenue on the west. The study area was made up of approximately sixty-two blocks. HDR's specific tasks included the assessment of hazardous materials, natural resources, waterfront, infrastructure, solid waste and sanitation, energy and public health. The assignment was administered through the NYCDCP On-Call contract in which Ms. Barnett serves as Contract Manager.

Lafarge North America Ravena Plant Modernization EIS. Ms. Barnett served as Project Manager for a State Environmental Quality Review Act (SEQRA) EIS for the modernization of Lafarge's cement manufacturing facility located in Ravena, NY. The project's objective is to upgrade an existing cement manufacturing facility with a state-of-the-art cement manufacturing facility. The EIS covered a broad range of impact categories, including air quality analysis, traffic, noise visual resources and a greenhouse gas emissions assessment. In addition, Ms. Barnett was responsible for overseeing the preparation of a SPDES application for the modernized plant, including a Best Technology Analysis assessment and the preparation of a SWPPP for use during construction of the new facility.

New York State Department of Transportation, Brooklyn-Queens Expressway Project Scoping Report and EIS. Ms. Barnett served as Assistant Project Manager for the preparation of a Tier I Environmental Impact Statement and Project Scoping Report for the rehabilitation of a segment of the Brooklyn-Queens Expressway between Sands Street and Atlantic Avenue in Brooklyn for the NYSDOT. The project also includes incorporating the SAFETEA-LU Section 6002 regulations and requirements as part of the project scoping process.

Bus Rapid Transit, Manhattan and Brooklyn, Categorical Exclusion(d). Ms. Barnett served as quality control manager for the environmental review documentation for the BRT systems along Nostrand and Rogers Avenue in Brooklyn, and First and Second Avenues in Manhattan. The environmental evaluations were prepared to provide the documentation necessary to support NEPA, and were prepared consistent with CEQR guidance.

New York City Department of Sanitation Solid Waste Management Plan Environmental Impact Statement. As Assistant Project Manager, Ms. Barnett's efforts included technical oversight and administration for preparation of an Environmental Impact Statement (EIS) in accordance with State Environmental Quality Review Act (SEQRA)/City Environmental Quality Review (CEQR) requirements for conversion of eight MTSs to containerize waste. She managed mobile and stationary air quality (using ISCST3, CAL3QHCR, Mobile 5B/6.0 and Part 5 models and includes an evaluation of PM2.5 impacts), odor, noise and traffic analyses conducted by technical staff, meetings and discussions with the New York City Department of Transportation and the New York City Department of

Environmental Protection, and subconsultant oversight for up to 13 other analyses required under CEQR. She was responsible for scheduling and coordinated all analyses between HDR and 11 offices/subconsultants. She participated in review of air quality analyses and results, noise monitoring and analysis methodology, traffic routing and analysis methodology, lead development and implementation of the odor sampling and analysis methodology and collection, and preparation of the technical analyses summaries for air quality, odor, noise and traffic.

NYCDEP Office of Environmental Policy and Assistance, Environmental Impact Statement / Environmental Assessment Services. Ms. Barnett served as project manager for the NYCDEP's Office of Environmental Planning and Assessment to provide assistance conducting technical reviews of air and noise analyses included in Environmental Impact Statements/ Environmental Assessment Statements (EISs/EASs) submitted to the NYCDEP's OEPA for review under SEQRA/CEQR. The analyses reviewed are based on ISCST3, CAL3QHCR, Mobile 5B/6.0/6.2 and Part 5 air quality models (including PM2.5 analyses), and Federal Highway Administration's Traffic Noise Model (FHWA's TNM) version 2.0/2.5. Ms. Barnett led the reviews and comments to agencies and their consultants for the American Stevedoring EAS.

John Guzewich

Environmental Monitoring Safety POC
NVAQ Monitoring

EDUCATION

Bachelor of Science, Environmental Sciences/ Studies, State Univ. of New York NY, 1980

REGISTRATIONS

OSHA 10-Hour Construction Safety, New York, United States, No. Certification No. 001066953 Issued: 10/03/2006, Expires: None Listed, Does Not Expire

OSHA - Permit-Required Confined Space Standard, 29 CFR 1910.146, New York, United States, No. Certification # 95CS0304-04 Issued: 03/04/1995, Expires: None Listed, Does Not Expire

The Hazardous Waste Operations and Emergency Response Standard (HAZWOPER), New York, United States Issued: 03/28/1987, Expires: None Listed, Does Not Expire

HDR TENURE

29 Years

INDUSTRY TENURE

32 Years

Mr. Guzewich is a project manager, a Blue Hill Office Safety Coordinator (OSC), and a member of the HDR Safety Committee. In his capacity as project manager, Mr. Guzewich is responsible for budgeting projects, supervising in-house staff and subcontractors, client interaction, and technical oversight. Mr. Guzewich has worked on a large number of projects involving remedial investigation, PCB contamination projects, volatile and other organic contamination projects, and metals contamination projects. He has worked on hazardous waste sites requiring a wide variety of personal safety protection levels (Level D to Level B). Mr. Guzewich has over 25 years of experience on hazardous waste investigations and remediation in New York, New Jersey, Pennsylvania, and Delaware. He is responsible for initiating field investigation activities for hazardous waste work sites. In this capacity he prepares and reviews field sampling plans (FSPs) and schedules and coordinates on-site efforts with HDR management and field staff, regulatory agencies, and subcontractors.

As a OSC he is responsible for developing and reviewing HASPs for all hazardous and non- hazardous waste investigations. In preparing site-specific HASPs, Mr. Guzewich evaluates the hazards at the site, develops engineering and administrative controls to reduce the hazards, recommends personnel PPE and monitoring equipment to be used on the site, determines the appropriate action levels to be used for upgrading or downgrading PPE, and develops the emergency plan for the site. He is responsible for ascertaining that all employees have the required training for work on hazardous waste sites and is responsible for recommending additional training needs for specific projects. Mr. Guzewich is also responsible for reviewing contractor's HASPs to ascertain whether or not they are in conformance with the specific project specifications, regulations, and requirements. He also oversees in-house and on-site training for HDR hazardous waste field crews. As part of HDR's QA/QC program, he is responsible for performing field audits of procedures and techniques used by HDR and subcontractor's field sampling crews. Mr. Guzewich has extensive experience in sampling surface waters, groundwater, soils, sediments, miscellaneous solid materials, oil, and air at both hazardous and non-hazardous sites. He served as the on-site coordinator (OSC) for many such sampling efforts, particularly for hazardous waste sites (where he has also served as the on-site HSO). Responsibilities include qualitative respirator fit testing; selection and use of PPE including clothing and equipment; sampling procedures and equipment; personnel and equipment decontamination; training in maintenance, calibration, use, and limitations of air monitoring equipment confined space entry training, and adherence to appropriate QA/QC procedures and protocols.

RELEVANT EXPERIENCE

Consolidated Edison Co. Of Ny Inc., Echo Avenue Site Remediation, New Rochelle, NY. Task Manager & Health and Safety Officer. Mr. Guzewich is task manager and health and safety officer (HSO) for a Phase II investigation and remediation of an unused electrical substation in New Rochelle, NY, contaminated with PCBs. He collected sample media and evaluating the data to determine if remediation goals were met, performed community air monitoring, and assisted Con Edison in overseeing the contractor. Mr. Guzewich assisted with preparation of the summary reports, and draft site management plan.

Dyno Nobel, Explosives Manufacturing Facility - Environmental Audit and Compliance Programs, Port Ewen, NY. Field Operations Supervisor & Health and Safety Officer. Mr. Guzewich prepared the sampling plan and subsequently conducted the soil, wastewater, and air sample collection this explosives manufacturing facility in Port Ewen, NY. He assisted in the inventory of production emission sources and waste explosives stored and then managed and implemented a project to develop sampling procedures for the collection of air samples from the discharge stack of a detonation chamber designed to detonate waste or off-spec explosive devices on-site prior to disposal to ensure the system met the discharge objectives required by the client and NYSDEC. Dyno Nobel received approval from NYSDEC for operation of the detonation chamber after review of the data report prepared by HDR.

Harris Corp., Whiteman, Osterman & Hanna, Remedial Investigation/Feasibility Study, Poughkeepsie, NY. Field Services Supervisor. Mr. Guzewich served as field services supervisor for groundwater sampling activities and O&M for the pump and treat system at this site. He coordinated a sub-slab communication testing investigation to assist in the design of a sub-slab depressurization system for the building.

Hausman Realty, Phase II & Remedial Design for Drycleaning Establishment, Former Mimi Cleaners, Scarsdale, NY. Project Manger. Mr. Guzewich is currently the project manger for the vapor intrusion assessments and mitigation at a former dry cleaning establishments under a Voluntary Cleanup Agreements entered into with the State of New York. The assessment included completion of NYSDOH Indoor Air Quality Questionnaire and Building Inventory reports, sub-slab, indoor air, and ambient air quality sampling and laboratory analyses, and development of mitigative measures. Soils below the slab were removed as much as possible and a vapor extraction system was installed and operated and maintained. Testing and development of a sub-slab depressurization system at this location and other structures in the area is currently being conducted. Initially Mr. Guzewich served as the Task Manager during excavation activities within the building and during installation and O&M activities for an SVE system installed at the former dry cleaning establishment.

ICI, Environmental Site Assessment, Tamaqua, PA. Field Services Supervisor & Health and Safety Officer. Mr. Guzewich was the field services supervisor and health and safety officer during the preparation of the sampling plan and HASP for this explosives manufacturing facility in Tamaqua, PA. He collected soil, groundwater, and air samples at this site. The sampling included difficult and unique air sample collection procedures during actual operation of an outdoor burn facility designed to detonate waste or off-spec explosive devices.

Lehigh Valley Industrial Park Inc, Bethlehem Steel South Side Redevelopment, Bethlehem, PA. Field Services Supervisor. Mr. Guzewich supervised field personnel and activities associated with the project. HDR is the principal project engineer responsible for all environmental aspects of the assessment and redevelopment of largest (over 1,000 acres) privately owned brownfields redevelopment project in the country. The project includes demolition of numerous buildings covering hundreds of thousands of square feet, movement of millions of cubic yards of manmade fill, remediation of numerous former materials handling areas, removal of historical underground chemical handling utilities, and design and environmental coordination required to construct new facilities. HDR oversees all Federal, state, and local permitting and closure approvals. Mr. Guzewich was responsible for collecting surface water, soil, and sediment samples as part of the Feasibility Study.

NYCDEP, NYCDEP, PS-227: Planning, Design, and Design Services During Construction for Reconstruction of Pumping Stations, New Douglaston, Bayswater Avenue, 15th Avenue and 122nd Street Pump Station, Queens County, NY. Field Operations Supervisor & Health and Safety Officer.

Scott Prugh

DSDC Quality Manager

EDUCATION

B.S., Civil Engineering, Pennsylvania State University, 1998

REGISTRATIONS

EIT/FE, Pennsylvania

CERTIFICATIONS

OSHA 30 Hour

OSHA 24 Hour – HAZWOPPER

OSHA 8 – HAZWOPPER Annual Refresher

WHMIS

Advanced Workzone Safety – New Jersey State Dept. of Transportation

USACE – Consultation Quality Management Training

National Environmental Protection Act (NEPA) Leadership Training

ACI 4 – Concrete Field Testing Technician – Grade I, New York

U.S. Navy – Honorable Discharge

HDR Tenure

7 Years

Industry Tenure

16 Years

Mr. Prugh is a Project Manager with 16 years experience in planning, design and construction of civil infrastructure projects. His experience is attributed to roles in safety, quality, planning, scheduling, cost control, estimating, client representation, utility coordination, government agency coordination and overall project management..

RELEVANT EXPERIENCE

Tappan Zee Constructors / New York State Thruway Authority, The New NY Bridge (Tappan Zee Hudson River Crossing), Westchester-Rockland County, NY. DSDC Quality Manager. The New NY Bridge will replace the existing Tappan Zee Bridge crossing which handles more than 138,000 vehicles every day—far more than its design capacity. The new twin bridges are over 3 miles long and will cross the Hudson River at one of its widest points to connect Rockland and Westchester counties. Key features of the new bridge include twin iconic cable-stayed main spans with 1,200-foot center spans. Each bridge carries four general traffic lanes plus shoulders and extra-wide emergency lanes. The bridge will have new temporary tolling facilities with AETC (All Electronic Toll Collection) and a shared-use path (dedicated bicycle and pedestrian) on the northern bridge with scenic overlooks. The project implements Intelligent Traffic Systems (ITS) and Advance Traffic Management Systems (ATMS) to improve the flow of vehicle traffic. The bridge is designed for a 100-year service life and will be mass-transit-ready for bus rapid transit without strengthening, or for commuter or light rail on a separate structure constructed between the two highway bridges. The project team will follow strict environmental performance commitments to protect the Hudson River estuary.

The New York State Thruway Authority selected design-build as the delivery method for this project to meet an aggressive schedule. HDR is the lead designer, and a subcontractor for Tappan Zee Constructors LLC, a consortium of Fluor Enterprises, American Bridge Company, Granite Construction Northeast, and Traylor Bros. Detailed design includes deep foundations, cable-stayed main span and girder/sub-stringer approach span structures, pre-cast substructure and superstructure components and highway design including alignments, AETC tolling, ITS, utilities and facility design. HDR is also leading significant Environmental Compliance activities including underwater noise, water quality and airborne air/noise monitoring.

Mr. Prugh's role on the project is planning, implementing and managing the Quality Control, Request for Information, Notice of Design Change, Request for Deviation from Design Requirements, As-Built and document control processes. He also serves as the on-site Design Quality Control Manager with primary auditing responsibilities of NDCs, RFIs, environmental plans/reports and the remaining Final BDS submissions. Additional responsibilities include: training & promoting the project quality

plan, managing subconsultant quality control, supporting QA & NYSTA oversight audits and providing overall quality guidance to the design staff. (Construction Cost: $3.14 billion. Dates: 2013-2018)

NYS Thruway Authority, Town of Woodbury, New York. Lead Estimator for designing the first stage of a high speed EZPass toll collection retrofit system for mainline and reconstruction – contract value: $8M. Tasks included: leading the estimating effort for a six consultant team, and assembling tender documents.

Central Pickering Development Plan Environmental Assessment, Regional Municipality of Durham, Ontario. Roadway Design Lead for this high profile, multi-agency, and multi discipline team to develop a servicing plan that will form the basis for phased implementation of regional water, wastewater, transportation, transit and service facilities infrastructure, for the Central Pickering study area. The transportation portion of the Project consists of conducting a Municipal Class EA - Schedule C for 3 Type A and 2 Type B roadway corridors. Responsibilities include managing the day to day project management duties, leading the roadway design team, collaborating with team lead and consultants of other concurrent EA studies, arranging and leading workshop meetings with stakeholders and government agencies.

Highway 60 Huntsville Area, Ministry of Transportation, Ontario. Project Manager for two separate projects; one is a detailed design project for resurfacing 24.5 km of roadway with the Algonquin Park. The second project is a preliminary design to assess a wild life crossing within the 24.5 km section. Project responsibilities consist of managing: the day to day interaction with MTO, sub consultants, and other stakeholder agencies, a multi-discipline team, and the detailed and preliminary design process.

Niagara Pavement Rehabilitation, Ministry of Transportation, Niagara, Ontario. Project Manager for a detail design assignment which is primarily a composite pavement rehabilitation with opportunity for highway improvements along six separate provincial highway sections including interchange ramps and side roads. Three separate contract design packages were prepared to facilitate construction between 2012-2015. HDR was the Prime Consultant and responsible for the total project management, design of alignments, drainage and traffic management. Pavement strategies include mill and pave and full depth reclamation. An Automated Pavement Condition and Inertial Profiler Survey Innovation Plan was submitted and accepted. It is a non-destructive investigation capable of identifying pavement conditions at normal traffic flow speeds. Electrical upgrades from partial to full illumination are part of this project. Foundation investigation and design are required for the high-mast pole lighting. The ATMS component is an upgrade from CCTV cameras in the tunnels to PTZ cameras. An Environmental Screening Document (ESD) will accompany the design.

Highway Traffic Act Review and Analysis of Speed and Parking Regulations, Ministry of Transportation, Ontario. Project Manager for

two separate studies involving comparison of the existing regulation against the actual field conditions; one study for parking and the other was for speed. Both studies required data collection in the field using sub meter GPS equipment and analysis using ArcGIS. Project responsibilities include overall project management of the studies.

Multi-use Pathway, City of Toronto, Ontario. Project Manager for two separate contracts; one in North York and one in Scarborough. The purpose of these projects is to improve access and safety by upgrading the existing multi-use pathway and designing new 3.5m pathways to connect the existing path network to public transit in the area. Project responsibilities include overall management of the detailed design and providing oversight of the construction administration.

Highway 406 Twinning, Ministry of Transportation, Ontario. Project Coordinator for the detail design of the widening of Highway 406 from Port Robinson Road to East Main Street (6 km) including three interchanges and three new structures; one being a CN Rail crossing. The project's south terminus is a 3 point roundabout with consideration given for a forth leg expansion. Responsibilities include: coordination of property concerns, utility relocations & information exchange, drafting subconsultant agreements, subconsultant oversight, geometric design support, cost risk assessment workshop team lead and various contract administration duties.

The Gore Road Widening Project, Regional Municipality of Peel, Ontario. Project Coordinator for the widening the existing roadway from two to four lanes within a 36m right-of-way. Considerations to accommodate the widening: re-grading for driveways & field entrances, property acquisition, utilization of both rural and urban cross sections, left and right turn lanes at major intersections, future upgrades, and relocation of utilities.

Light Rail Double Track, Baltimore, Maryland. Project Engineer for construction of signal, signal power, communication and catenary on new and existing light rail – contract value: $72M. Tasks included: initiating project controls, coordinating duct bank installation between civil and electric contractors, leading catenary installation operation planning with union linemen, managing quality control on all contracts, developing and implementing quality procedures, and maintaining a positive owner & client relationship.

West End Rail Entitlement, MTA, Whitestone, New York. Estimator for an entitlement project which organized and analyzed five years of Owner supplied services data for an elevated rail line – claim amount: $5M. Tasks included: collecting and organizing contractor records for owner supplied services, designing a database to effectively summarize and analyze data, drafting sections of entitlement document, generating final detailed document, and participating in in-house team meetings for presentation to client.

ConnDOT Stamford Rail Station, Stamford, Connecticut. Office Engineer for the construction, reconstruction, & rehabilitation of rail, platforms, escalators, elevators, pedestrian bridges, rail bridge, catenary, pedestrian tunnel, architectural, mechanical, and electrical alterations to the station building, landscaping, and paving – contract value: $58M. Tasks included: planning and executing a field office move during project, reviewing and coding of timecards, preparation of weekly labor reports, preparing monthly pay estimates and negotiating payment for cost plus items, receiving, logging, distributing, maintaining job files, assigning purchase orders, tracking and managing outside equipment rentals, serving as job health and safety officer, assisting senior field engineers & superintendents in planning, supporting field operations, and conducting safety audits on multiple projects as part of district safety committee.

GO Transit Bus Rapid Transit Busway and Road Structures (West), Mississauga, Ontario. Project Coordinator for the detailed design and preparation of tender documents for an exclusive grade separated two lane two way bus-only roadway that is approximately 1.5km with modifications to two MOT interchanges, realignment of two ramps and construction of five new grade separate structures along the busway. Tasks include: utility coordination of survey & geotechnical field activities.

St. John's Sideroad Detailed Design Utility, Regional Municipality of York, Ontario. Coordinator for the reconstruction of a two-lane rural roadway with 2.5m gravel shoulder to improve roadway safety. Items addressed in the design: re-grading for driveways & field entrances, property acquisition, improvements to Highway 404 grade separation and approaches, Wesley Creek relocation, geometry adjustments at major intersections, future upgrades, and relocation of utilities. Responsible for utility relocation and constructability reviews.

Neptune RTS, Long Island, New York & Sayreville, New Jersey. Client Representative for construction of 500kV HVDC – contract value: $600M. Methods of installation included underwater jetting, direct bury, and horizontal directional drilling. Tasks included: planning & preparation of NYSDOT required work plans for delivery & installation of an electric transmission and fiber cable system, coordination and oversight of a direct bury 345 kV AC line, planning and coordination of a backup 34.5kV service line installation for a converter station, leading weekly coordination meetings with regulatory agencies, managing as-built process for multiple contracts, preparing RFPs, managing final restoration of the Parkway shoulder, closing environmental permits and coordinated the installation of cable signs at water crossings.

Northeast Utilities, Bethel, Connecticut. Quality Manager for reconstruction of 12 miles existing 115 kV service from overhead to underground – contract value: $75M. Work included dig / lay / backfill of ductbank, vault installation, cable pulling, splicing, cable racking and grounding. All work was installed within local and state highways. Tasks

included: drafting, implementing, and managing contractor controlled quality program, developing and maintaining a positive owner relationship by openly discussing quality efforts, promoting a positive attitude towards quality to staff and field personnel, supporting in-house operation planning on civil and electrical work, coordinating and leading review of work plans with owner at pre-activity meetings, overseeing all inspection and field documentation tasks, developing tracking, trending, and analysis of all quality efforts and reporting to management, managing the as-built process and delivery.

Level 3 Communications, Princeton to Newark, New Jersey. Lead Field Engineer as part of the construction of 16,000-mile design-build national fiber optic network running through 38 states in the U.S. and three provinces in Canada – contract value: $500M. Cable was installed in the right-of-ways of state, county and city highways, railroads, utilities, and private lands. Construction utilized convention trenching, plowing, horizontal directional drilling and bridge attachments. Tasks included: assisting design engineers in route selection, assessment & permitting, supervising junior field engineers, providing updated operation status using GIS, maintaining project schedule, managing safety and utility markout process, coordinating tandem trucks, maintaining quality control program on self-perform work.

Kiewit New York District, Park Ridge, New Jersey. Responsible for estimating and bidding heavy and highway projects in the Metro Tri-State and Mid-Atlantic area. Responsible for take-offs, operation planning, quote research and pricing.

Millennium Homes, Woodbury, New York. Infrastructure Assistant Project Manager for permitting and designing a 400 acre subdivision – contract amount: $600 K. Tasks included: revising utility sections of Environmental Impact Statement, coordinating design effort of all infrastructure, representing client in meetings with the town engineer, monitoring financial status and handling invoicing.

Blue and Gold, New Palz, New York. Infrastructure Task Leader for permitting and designing a 35 acre subdivision – contact value: $325K. Tasks included: revising utility sections of Environmental Impact Statement, designing roadway, water, sewer, and stormwater systems, coordinating with town engineer on upgrade aspects of the current sewer system.

National Park Service, Denver, Colorado. Project Manager for design of water, storm and sanitary systems within New York City Metropolitan Area. Tasks included: managing roof replacement of historic building and performing site assessments of failing drainage & sanitary facilities.

U.S. Army Corp of Engineers, Picatinny Arsenal, New Jersey. Task Leader as part of designing a Packaging, Handling, Storage and Transportation (PHS&T) facility – BRAC 2005 contract value: $23.8M. Tasks included: leading a field investigation to determine existing utilities & locations, performing water pressure testing with base public works

contractor, monitoring and reporting on subcontractor geotechnical investigation activities, and coordinating with base security & EOD personnel during field activities.

Katie Eberhart

Environmental Compliance Review

EDUCATION
Master of Science, Ecology, University of Maryland Eastern Shore, Marine-Estuarine-Environmental Sciences (MEES) Program, 1997

Bachelor of Science, Biology, Muhlenberg College, 1992

PROFESSIONAL AFFILIATIONS
American Ornithologists' Union

INDUSTRY TENURE
18 Years

HDR TENURE
1.5 Year

INDUSTRY TRAINING

- FERC Environmental Review and Compliance for Natural Gas Facilities, 2014
- OSHA 40-Hr, 8-Hr Refresher, and Field Supervisor Training, 2000-2014
- Avian Interactions with Power Lines Workshop – APLIC, April 2012 and September 2013
- NJDEP Flood Hazard Area Control Act Rules Training - Rutgers University, November 2011
- Wetland Delineation Training – IWEER, 2002

Ms. Katie Eberhart has more than 15 years of experience in environmental management with a strong emphasis in planning, developing, supervising and successfully implementing multi-disciplinary environmental projects. She has worked extensively with private sector clients in the power, chemical, pharmaceutical, oil/gas and commercial sectors, with some exposure to local and federal governments. Trained as a terrestrial ecologist, Katie's technical skills include:

- State and federal regulatory compliance;
- Threatened and endangered species investigations;
- Wildlife studies and habitat evaluations (specialty – avian investigations);
- Wetlands investigations, restoration plan implementation, and monitoring;
- Invasive species management;
- Environmental permitting;
- NEPA documentation;
- Ecological risk assessment for CERCLA, RCRA, and state programs.

She strictly adheres to project budgets, schedules, and quality and safety, which have been recognized and highlighted by clients and regulatory agencies.

RELEVANT EXPERIENCE

Tappan Zee Constructors / New York State Thruway Authority, The New NY Bridge (Tappan Zee Hudson River Crossing), Westchester-Rockland County, NY. Environmental Compliance Reviewer. The New NY Bridge will replace the existing Tappan Zee Bridge crossing which handles more than 138,000 vehicles every day—far more than its design capacity. The new twin bridges are over 3 miles long and will cross the Hudson River at one of its widest points to connect Rockland and Westchester counties. Key features of the new bridge include twin iconic cable-stayed main spans with 1,200-foot center spans. Each bridge carries four general traffic lanes plus shoulders and extra-wide emergency lanes. The bridge will have new temporary tolling facilities with AETC (All Electronic Toll Collection) and a shared-use path (dedicated bicycle and pedestrian) on the northern bridge with scenic overlooks. The project implements Intelligent Traffic Systems (ITS) and Advance Traffic Management Systems (ATMS) to improve the flow of vehicle traffic. The bridge is designed for a 100-year service life and will be mass-transit-ready for bus rapid transit without strengthening, or for commuter or light

rail on a separate structure constructed between the two highway bridges. The project team will follow strict environmental performance commitments to protect the Hudson River estuary.

The New York State Thruway Authority selected design-build as the delivery method for this project to meet an aggressive schedule. HDR is the lead designer, and a subcontractor for Tappan Zee Constructors LLC, a consortium of Fluor Enterprises, American Bridge Company, Granite Construction Northeast, and Traylor Bros. Detailed design includes deep foundations, cable-stayed main span and girder/sub-stringer approach span structures, pre-cast substructure and superstructure components and highway design including alignments, AETC tolling, ITS, utilities and facility design. HDR is also leading significant Environmental Compliance activities including underwater noise, water quality and airborne air/noise monitoring.

Katie Eberhart's activities include conducting reviews to document compliance with the ECP's for the following programs: water quality monitoring for dredging and pile driving monitoring (i.e., sturgeon and other fish), underwater noise monitoring as well as field audits for construction noise and vibration control monitoring, air quality monitoring, stormwater pollution prevention plan inspections (SWPPP), contaminated materials management program and other general environmental compliance monitoring in accordance with project requirements.

(Construction Cost: $3.14 billion. Dates: 2013-2018)

Power Sector

Project Manager, Wetlands Mitigation Project, Champlain Hudson Power Express Project. Managing a team developing an approach for mitigating permanent impacts to wetlands associated with a 332 mile high voltage electric transmission system in New York State. Developed an approach for limiting the amount of palustrine forested wetland requiring mitigation. Conducted an alternatives analysis to evaluate mitigation opportunities at three locations and developed a conceptual plan at one site that will meet with USACE requirements.

Technical Resource, Training Courses and BMP Manual Development, Pepco Holdings. Key team member to develop and implement a one-day interactive workshop on substation development that fostered cross-discipline communication and increased overall regulatory compliance. Trained 125 employees in three business units which exceeded client's corporate goal. Team lead designing three computer-based environmental awareness training modules to increase employee understanding of the importance of regulatory compliance, PHI's compliance programs and policies, and the resources available to help achieve corporate environmental goals. Developing BMPs associated with protected species and habitats for use during transmission line construction activities. Also providing project management support including maintaining client relations, developing scheduling tools and

team development.

Task Leader, Critical Issues Analysis (CIA), Proposed Wind Farm, Confidential Client. Evaluated potential risk to avian community for preparation of Avian Impact Analysis section of CIA. Used existing databases to determine the avian community during breeding, migratory and winter seasons. Identified potential impact to threatened and endangered species based on frequency of occurrence in project area. Prepared white paper documenting study methodology, results and recommendations.

Task Leader, Wetland and Wildlife Services, Various Clients. Conducted wetland delineations and determined wetland permitting and vegetation management requirements for three substation/ transmission line sites in southeastern Pennsylvania and Maryland. Approved ornithologist to conduct threatened and endangered species surveys for song and wading birds in support of siting projects.

Public Sector

Task Manager, Environmental Permitting, Repair of Pier 4 and Wharf 4B at Philadelphia Navy Yard, NAVFAC. Coordinated and prepared a pre-construction notification package for a Nationwide Permit 3 to complete repairs for a pier on the Delaware River in Philadelphia. Supported client at a joint pre-application meeting with USACE and PADEP at the Southeast Office in Norristown. Coordinated re-consultation with natural resource agencies via a new PNDI database request for information.

Project Manager and Technical Resource, Environmental Permitting, Various Clients. Scoped projects and supervised staff to develop aggressive state/federal permitting strategies for municipal engineering projects that reduced project schedule and costs where feasible. Conducted wetland/waterway delineations that comply with federal and state guidance. Coordinated completion of threatened and endangered species and archeological investigations. Supported the preparation of federal and state wetlands/waterway permit applications in Delaware and Pennsylvania.

Technical Resource, Programmatic Environmental Assessment – Communication Towers, FCC. Prepared migratory birds portion of the Affected Environment section of the PEA. Gathered and presented population level data on breeding and wintering landbirds and waterfowl. Prepared information on migratory bird habits including seasonality, flight heights, migratory routes and sources of mortality.

Task Leader, Wallops Island Alternative Energy Project, NASA. Assessed the potential effects of 2 utility-scale and up to 5 residential-scale turbines on birds in coastal Virginia using pre-construction field study results. Established context from similar studies to prepare NEPA Environmental Assessment documentation. Led extensive research to assess risk to birds from residential-scale turbines. Provided technical

support at public meeting and prepared responses to stakeholder comments on Proposed Action and Alternatives.

Gas/Oil Sector

Deputy Project Manager, Columbia 1570 North Gas Pipeline. Responsible for most aspects of project implementation including schedule development and maintenance, contract negotiations, budget tracking, oversight of cultural and biological field team activities, and managing team preparing resource reports for this 7(c) filing project.

Task Leader, Freshwater Wetlands Remediation/Restoration, BP. Provided a broad range of wetland remediation and restoration support services for a hazardous waste site in Delaware. Performed field oversight of subcontractors conducting restoration planting, invasive species management, and post-restoration monitoring activities. Directed wetland soil sampling effort to support remedial decision-making. Mapped dominant vegetation communities for input into freshwater wetland restoration design. Developed and implemented marsh restoration monitoring program to assure compliance with DNREC/USACE wetland permits. Achieved site certification by the Wildlife Habitat Council.

Field Ecologist, Wetland and Wildlife Services, Confidential Marcellus Shale Client. Conducted field surveys that supported avoidance of wetlands, streams and threatened/endangered species habitat (avian and reptile) during the seismic survey portion of the study in northwestern Pennsylvania. Used GPS to document access routes around these features and location of observed timber rattlesnakes. Created and distributed dominant plant species list for use by field biologists.

Task Leader, Wildlife Receptor Survey, Northeast US Oil Refinery. Implemented wildlife receptor surveys in terrestrial and aquatic habitat to evaluate potential risk as part of a multi-tier ERA for large oil refinery on the Delaware River. Conducted surveys in areas known to attract birds to determine species composition and evaluate how various species were using the habitat. Evaluated use by wading birds given proximity to a significant heronry. Limited the need for corrective action to a small subset of the originally identified SWMUs minimizing remedial costs.

Chemical/Pharmaceutical/Commercial Sector:

Program Manager, Refrigerants Management Program Development, Merck. Directed a team supporting the implementation of a more robust refrigerants management program to improve compliance with federal Clean Air Act regulations. Oversaw the development of and training on an Ozone Depleting Substances Guidance Document and Compliance Plan. Recommended a path forward to higher level management to close program gaps associated with communications, asset life cycle, equipment, chemical management and work orders. Co-lead task force meetings comprised of union and non-union employees from three divisions.

Project Manager, Post-restoration Wetland Monitoring, DuPont.

Developed long-term strategy for a wetlands monitoring program for a restored Superfund site in Delaware. Performed 13 years of field activities including vegetation/wildlife surveys, wetland delineation, and restoration monitoring. Devised and implemented a novel program for introduction of a host-specific bio-control (Galerucella beetles) for the invasive species purple loosestrife (Lythrum salicaria) as part of the invasive species management program. Supported efforts for a phased installation of a 0.5 acre pollinator garden for beneficial reuse of a landfill. Achieved USEPA approval for desirable reductions in monitoring. Achieved site certification by Wildlife Habitat Council.

Program Manager, Wastewater Consent Decree (CD) Compliance, Merck: Supported client's compliance with a $20M CD which required completion of numerous on- and off-site environmental projects. Reviewed progress of 7 grantees multi-year restoration projects to assure adherence to CD and Project Implementation Plans. Maintained documentation and other project-related records. Developed, tracked and communicated project schedule to client task force. Prepared 3 multi-volume annual reports to comply with CD reporting requirements. Achieved no further action from USEPA, Department of Justice and PADEP for completed tasks.

Project Manager, Post-Remediation Contaminants Study, DuPont. Managed strategic development, implementation and oversight of a two-year contaminants study on wintering duck at a former trap and skeet range in coastal Connecticut to comply with Consent Order. Designed and conducted comprehensive activity surveys to evaluate use of the aquatic areas surrounding the site and identify areas of potential risk. Implemented traditional and novel techniques at site and reference site to collect target species for blood collection. Oversaw GIS and statistical analysis to determine the potential for negative impacts from ingestion of lead shot. Assembled and managed technical team, conducted agency negotiations/presentations, and prepared technical reports.

Project Manager, Ecological Risk Assessments (ERA), Various Clients. Evaluated potential risk to aquatic and terrestrial plant and wildlife receptors from metals, SVOCs, VOCs, pesticides, PCBs and radiologicals at numerous hazardous waste sites in the US under CERCLA, RCRA and state programs. Directed and conducted environmental media field sampling activities and reporting efforts. Applied site-specific assessment strategies in order to meet investigation objectives, client goals, and agency expectations. Limited number of SWMUs requiring remedial action where technically feasible to reduce project costs.

Robin Pozzi

229 Shear Hill Road ● Mahopac, NY 10541 ● (914) 774-1466 ● rpozzi87@gmail.com

EDUCATION

B.S. Environmental Studies
Pace University Pleasantville, NY **2010**
Aldo Leopold Award: Outstanding Senior in Environmental Studies
Thesis: "Historical Districts in Bedford, NY (GIS Map)"

A.A.S. Liberal Arts & Science-Social Science
Westchester Community College Valhalla, NY **2007**
Dean's List; Member Alpha Beta Gamma Honors Society

Certifications: OSHA 10 Hour General Construction Course, NYSDEC Certificate of Erosion and Sediment Control Training (12T-040913-71), OSHA Confined Space Training, CPR/AED and First Aid Certified

RELEVANT ACTIVITIES

Certificate of Erosion & Sediment Control Training- New York Dept of Environmental Conservation 4-Hour Training

Somers Energy and Environmental Committee: (SEEC)- Maintaining and enhancing the quality of life in Somers by implementing a plan to begin a better coexistence with our environment.

Senior Thesis: Prepared GIS mapping of the Town of Bedford's historical structures outside their current historic districts. All structures built prior to 1900 were identified and if a structure appeared in either the 1889 or 1901 town map it was placed with GIS coordinates on a newly developed GIS map.

Westchester County Environmental Assessment Initiative: "How Green Is My Town" project:
Pace University partnered with Grassroots Environmental Education to evaluate the towns in their counties, using the program's extensive rating criteria. Conducted research using the 142 key "Based on green town attributes"

Village of Mt. Kisco, N.Y. --10/08-12/09: Project to identify the carbon footprint of the town of Mt. Kisco as of the year 2006. Gathered data, prepared spreadsheets, evaluated and recommend alternatives to reduce carbon footprint.

KEEP: (Kensico Environmental Enhancement Program) NY DEP program to protect the Kensico Reservoir.

Department of Environmental Protection: Worked with Educator and speaker at Pace University's celebration of Earth Month to organize an exhibit demonstrating the importance of protecting our local watershed.

Mahopac High School Biology/Science Department: Selected to travel to Costa Rica to study the Rain Forest.

EMPLOYMENT HISTORY

Lawler Environmental Group, LLC **July 2013- Present**
Assistant Environmental Planner
. Storm Water Pollution Prevention Plan (SWPPP) inspections for the new Tappan Zee Bridge construction work located in Westchester and Rockland Counties.
. A part of the Environmental Compliance Team (ECT) to help ensure Tappan Zee Constructors, LLC (TZC) confirm compliance with Project construction noise and vibration control by monitoring, minimizing and/or mitigating related project activities. Perform daily field inspections and discuss with the on-site Field Engineer or Superintendent on any observed conditions required follow-up and/or documentation.
. Assisting LEG in the development of an unaccounted for water and/or non-revenue water program for Aquarion Water Company. The program includes in situ meter testing for the determination of meter accuracies and identification of unaccounted for water and/or non-revenue water within AWC's water supply systems.
. Completes data entry for billing all AWC's meters

Somers 202, Yorktown, NY **Nov 2012- Present**
Bartender
. Made and served drinks in a timely and efficient manner.
. Ensured costumer service while maintaining quality and consistence in a high volume environment.

Land-Tech Consultants, LLC , Southbury, CT **May 2011- July 2012**
Environmental Analyst
. GIS Mapping, Environmental impact assessment, wetland restoration/ enhancement planning, wetland function and value assessment, local-state-federal land use permit application preparation, environmental monitoring.

Centerplate Service, Inc./Legends Hospitality, Bronx, NY **2005-Oct 2014**
Reserved Seating Food Service at Yankee Stadium
. Provide expert customer service to clients.
. Take refreshment orders and ensure proper delivery in multiple reserved seating sections during home games.

Christopher Coccaro

Marine Environmental Compliance Lead

EDUCATION

Master of Science, Environmental Engineering, Manhattan College, 2011

Bachelor of Science, Environmental Sciences, University of Delaware, 2008

REGISTRATIONS

ISI Envision Sustainability Professional

CERTIFICATIONS

N/A

PROFESSIONAL MEMBERSHIP

N/A

Mr. Coccaro has 4 years of experience in the water, wastewater, and environmental compliance projects ranging from design phase through construction inspection. Project responsibilities have included environmental planning, design, scheduling, public relations, quality control, field inspections, and permitting. Mr. Coccaro has spent his career developing infrastructure projects in the New York Metropolitan area. This experience provides him with the ability to coordinate with design and construction personnel on designs to ensure they meet environmental performance commitments. Mr. Coccaro currently manages marine compliance operations asscciated with the New NY Bridge Project (Tappan Zee Hudson River Crossing).

RELEVANT EXPERIENCE

Tappan Zee Constructors / New York State Thruway Authority. The New NY Bridge (Tappan Zee Hudson River Crossing), Westchester-Rockland County, NY. The New NY Bridge will replace the existing Tappan Zee Bridge crossing which handles more than 138,000 vehicles every day—far more than its design capacity. The new twin bridges are over 3 miles long and will cross the Hudson River at one of its widest points to connect Rockland and Westchester counties. Key features of the new bridge include twin iconic cable-stayed main spans with 1,200-foot center spans. Each bridge carries four general traffic lanes plus shoulders and extra-wide emergency lanes.

The New York State Thruway Authority selected design-build as the delivery method for this project to meet an aggressive schedule. HDR is the lead designer, and a subcontractor for Tappan Zee Constructors LLC, a consortium of Fluor Enterprises, American Bridge Company, Granite Construction Northeast, and Traylor Bros. Detailed design includes deep foundations, cable-stayed main span and girder/sub-stringer approach span structures, pre-cast substructure and superstructure components and highway design including alignments, AETC tolling, ITS, utilities and facility design. HDR is also leading significant Environmental Compliance activities including underwater noise, water quality and airborne air/noise monitoring.

Mr. Coccaro's role on the project included developing environmental compliance plans, implementing environmental compliance plans, performing regular inspections of construction activities, developing compliance reports, submitting permit modification requests, managing marine-based compliance operations including water quality monitoring, underwater noise monitoring, and fish monitoring surveys.

Construction Cost: $3.14 billion. Dates: 2013-2018

Non-HDR Experience

Corporation of the Presiding Bishop Drinking Water Assessment, Various Locaions. Mr. Coccaro performed site visits in the North east region of the United States and Canada as various meeting houses and campsites. Site visits included generating site assessment reports which documented existing infrastructure, system observations, sanitary

deficiencies, and collection of water quality samples.

Springfield Massachusetts Sewer Commission Document Linkage Project, Springfield, Massachusetts. Mr. Coccaro coordinated in a Joint Venture project which geospatially reference documents from the city's records toa graphical information system (GIS) map.

Rockaways Wastewater Treatment Plant Hurricane Sandy Recovery, NYCDEP, Rockaways, New York City. Mr. Coccaro provided on-site coordination and consultation with the recovery effort of the Rockaway wastewater treatment plant in the aftermath of Hurricane Sandy. Mr. Coccaro worked in a Joint Venture and with New York City Department of Environmental Protection personnel to coordinate the clean-up and process of re-starting the plant which was fully offline following the storm.

Alexandria Wood

Equipment Environmental Compliance
Air/Noise Environmental Compliance

EDUCATION
B.A., Environmental Science, New York University, 2014

REGISTRATIONS
N/A

CERTIFICATIONS
N/A

PROFESSIONAL MEMBERSHIP
N/A

Alexandria Wood is an Environmental Scientist at HDR. She has been involved with projects that include environmental compliance and monitoring. Ms. Wood has been responsible for authoring and compiling environmental reports related to compliance. She has performed detail checks and quality control reviews and has experience compiling and analyzing large quantities of data.

RELEVANT EXPERIENCE

Tappan Zee Constructors / New York State Thruway Authority, The New NY Bridge (Tappan Zee Hudson River Crossing), Westchester-Rockland County, NY. Environmental Scientist. The New NY Bridge will replace the existing Tappan Zee Bridge crossing which handles more than 138,000 vehicles every day—far more than its design capacity. The new twin bridges are over 3 miles long and will cross the Hudson River at one of its widest points to connect Rockland and Westchester counties. Key features of the new bridge include twin iconic cable-stayed main spans with 1,200-foot center spans. Each bridge carries four general traffic lanes plus shoulders and extra-wide emergency lanes. The bridge will have new temporary tolling facilities with AETC (All Electronic Toll Collection) and a shared-use path (dedicated bicycle and pedestrian) on the northern bridge with scenic overlooks. The project implements Intelligent Traffic Systems (ITS) and Advance Traffic Management Systems (ATMS) to improve the flow of vehicle traffic. The bridge is designed for a 100-year service life and will be mass-transit-ready for bus rapid transit without strengthening, or for commuter or light rail on a separate structure constructed between the two highway bridges. The project team will follow strict environmental performance commitments to protect the Hudson River estuary.

The New York State Thruway Authority selected design-build as the delivery method for this project to meet an aggressive schedule. HDR is the lead designer, and a subcontractor for Tappan Zee Constructors LLC, a consortium of Fluor Enterprises, American Bridge Company, Granite Construction Northeast, and Traylor Bros. Detailed design includes deep foundations, cable-stayed main span and girder/sub-stringer approach span structures, pre-cast substructure and superstructure components and highway design including alignments, AETC tolling, ITS, utilities and facility design. HDR is also leading significant Environmental Compliance activities including underwater noise, water quality and airborne air/noise monitoring.

Alex Wood's role on the project is to write environmental compliance reports, to compile air quality, noise and vibration annotated data reports, and to support with the production of environmental compliance documents.

(Construction Cost: $3.14 billion. Dates: 2013-2018)

Barbara A. Barnes, RLA, LEED AP

Permitting
Arborist

EDUCATION

BA, History, University of Washington, 2002

BLArch, University of Washington, 2002

Certificate of Restoration Ecology, University of Washington, 2002

Certificate in Project Management, New York University, expected completion in 2015

REGISTRATIONS

LEED Accredited Professional, US National Registration Issued: 07/20/2009

Registered Landscape Architect: New York

CERTIFICATIONS

N/A

PROFESSIONAL MEMBERSHIP

N/A

Mrs. Barnes is a registered Landscape Architect and has been practicing in the New York Metro-region for over a decade, with an emphasis on sustainable urban landscapes in the public realm. She has had the unique experience of designing and overseeing dozens of multi-million dollar projects through from design and permitting onto construction and maintenance. Having in-depth experience in all project phases enriches her work and helps her to anticipate scheduling, construction, permitting, and maintenance concerns that may impact a project's budget or the desired outcome.

Barbara has conducted seminars on Green Infrastructure, Wetland Restoration in Brownfields, and Urban Reforestation for the New York Chapter of the American Society of Landscape Architects, the New Jersey Brownfield Coalition, and NYC Department of Parks and Recreation.

RELEVANT EXPERIENCE

NYCDEP BEPA, Green Infrastructure Design Services Contract, Area #2. HDR was selected as the consulting firm to design green infrastructure within a 3,000 acre section of Queens to assistance New York City in complying with a portion of the green infrastructure requirements in the CSO consent order. GI practices will be designed for both in the street right-of-ways and on public properties as part of the project. Ms. Barnes will contribute specifically to designing onsite techniques within New York City Department of Education and New York City Department of Parks and Recreation sites. These techniques include permeable pavement, bioretention swales, storm-chambers, and dry wells. Additionally, Ms. Barnes will be responsible for coordinating meetings with DEP, SCA, DOE, and DPR to ensure alignment on the design techniques, construction document standards, and contract specification standards.

Port Authority of New York and New Jersey (PANYNJ); JFK International Airport – Thurston Basin Tidal Wetland Restoration; Queens, NY: The completion of the first phase of restoration for Thruston Basin, a site less than an acre in size, was a priority for PANYNJ. In less than 28 business days the project went from initiation to substantial completion of the first phase of the project, which primarily included excavation and final grading. As Project Manager Barbara coordinated with subconsultants and the Project Team to ensure communications remained open during this fast moving project, facilitated the independent review of subconsultant restoration plans, and provided onsite observation of construction activities.

New York State Office of General Services (NYS OGS), New York State Division of Military and Naval Affairs (DMNA), and National Guard Bureau (NGB); Camp Smith Access Control Point; Cortland Manor, NY: The Camp Smith Training Site is a mission-critical facility during adverse weather events and states of emergencies, as well as a staging area to the downstate region during domestic response events. The existing Camp Smith Training Site entrance does not comply with

Army standards in regards to safety, security, and traffic flow. Nor does it provide adequate space to satisfy security functional requirements, meet current anti-terrorism and force protection standards, or meet minimum stand-off distances required by the Army. As a result of these deficiencies, the existing access control and entrance layout compromises the mission of the facility and negatively impacts their ability to respond to State and Federal emergencies. The project consists of a permanent access control point, the creation of which will impact freshwater tidal wetlands. Ms. Barnes is responsible for Federal and State Environmental Permits, as well as mitigation design and associated construction documents for this fast-tracked priority project.

New York City Department of Environmental Protection (NYC DEP) Water for the Future Program; Ulster, Orange, Putnam, and Westchester Counties, NY: The Delaware Aqueduct is comprised of several sections, the longest of which is referred to as the Rondout-West Branch Tunnel (RWBT), located in New York. The RWBT is currently leaking between 15 and 35 million gallons of water per day. The Water for the Future Program was developed to repair leaks in the RWBT. As part of WFF, DEP is constructing an approximately three-mile long bypass tunnel, which is designed to bypass a leaking section of the RWBT known as the Roseton crossing, located in the Town of Newburgh, Orange County, New York. While the bypass tunnel is being connected to the existing tunnel, the Delaware system reservoirs would become temporarily unavailable. Therefore, DEP anticipates an increased reliance on its Catskill and Croton systems during that time. In addition, DEP is developing additional water supplies to bridge the gap in water supply during the RWBT shutdown. These include the reactivation of an existing Queens groundwater system and rehabilitation of the Catskill Aqueduct. As part of the Project Team, Ms. Barnes is responsible for the Quality Review of Natural Resource components of the project, including the Environmental Impact Statement, State Historic Preservation Office Consultation requests, and municipal permits for over 14 towns and villages in four counties.

Federal Highway Administration (FHWA)/New York State Thruway Authority (NYSTA)/ New York State Department of Transportation (NYSDOT) Tappan Zee Hudson River Crossing Project (New NY Bridge Project), South Nyack and Tarrytown, NY. The New NY Bridge Project is a 3.1 mile bridge replacement of the existing Tappan Zee Bridge between Rockland and Westchester Counties in NY. This approximately $3.2 billion design/build project, funded by the Federal Highway Administration and the State of New York, includes a complete bridge replacement, dredging, cabled-stayed main spans over the federal navigation channel of the Hudson River, demolition of the existing Tappan Zee Bridge. As a Quality Control Reviewer, Ms. Barnes was responsible for the technical content and quality of permit applications including: US Army Corps (USACE) Section 10/404 Permit), USACE Nationwide 7 Permit, Modifications to NYSDEC Tidal Wetlands/ Incidental Take/Water Quality Certification Permit, NYSDOS Coastal Zone Consistency, NYSOGS Underwater Land Conveyance, and compliance with local ordinances.

NON-HDR EXPERIENCE

Central Park Conservancy (CPC); Central Park Woodland Restoration; New York City, NY: As Director of Design for Great Ecology Inc., Barbara led the development of a multi phase feasibility study for the

Central Park Conservancy. The goal of the project was to assess the ecological health of The North Woods and The Ramble for both the watercourses and surrounding habitats. The analyses informed the design of the Conservancy's restoration projects and master plan development by focusing on analyzing the root causes of ecological degredation and design techniques to improve habitat functionality while honoring the past.

Woodbridge Waterfront Park; Woodbridge, NJ: While working for Great Ecology Inc Barbara acted as the Senior Project Manager for over 100 acres of freshwater, tidal, and open water restoration for a 185-acre Brownfield Remediation Project on the Raritan River in New Jersey. Barbara, leading a team of ecologists and designers, completed restoration construction documents, regulatory coordination, and construction observation for a complex mitigation project that will remediate a past industrial site, provide support redevelopment, and for the first time in over a century offer to Woodbridge Township public access to the Raritan River.

New York Department of Parks and Recreation (NYC DPR); Queensbridge Park; Queens, NY: As an employee of the New York City Department of Parks and Recreation Barbara completed the preliminary permitting and construction documents for the shoreline restoration of Queensbridge Park. Queensbridge Park, on the shore of the East River, had a failing seawall through with electrical conduits for the subway transverse. With service to the F train threatened, emergency repairs were required to ensure public safety. The project, from initiation to completion, was accomplished within two years at a budget of $6M.

New York Department of Parks and Recreation (NYC DPR); Greenstreets Program; Throughout New York City, NY: Barbara, as Design Team Leader for New York City Department of Parks and Recreation, synchronized divergent groups, including multiple branches of state and city governments, political appointees and elected officials, and non-profit organizations in order to reach a unified consensus on multiple projects, while meeting design goals on time and within budgetary constraints. She was also responsible for organizing and coordinating multi-disciplinary team as part of sustainable urban planning and civic landscape architectural services that are responsive to the city dynamics as part of the PlaNYC initiative in New York City. Projects she managed ranged in value fom $650K to $6.9M.

Ronald A. Alevras

Permitting

EDUCATION

M.S., Fishery Science, Oregon State University, 1970

B.A., Science Education, Montclair State College, NJ, 1965

REGISTRATIONS

N/A

CERTIFICATIONS

N/A

PROFESSIONAL MEMBERSHIP

N/A

Mr. Alevras is a senior project manager at HDR. Mr. Alevras has extensive experience with a wide range of natural resource evaluations and impact assessments with emphasis on water related issues. This experience spans freshwater, estuarine and marine environments and a diversity of projects such as hydropower licensing, power plant cooling water systems, waterfront development, dredging and submarine cables and pipelines. Studies and reporting have ranged from pre-project resource evaluations, the preparation of impact assessment documents, the preparation of mitigation plans and post-project monitoring to document actual impacts. Throughout this project experience, Mr. Alevras has worked with client architects and engineers to refine elements of project designs to minimize adverse impacts on aquatic life. Mr. Alevras has also assisted HDR's clients in the preparation of mitigation plans to compensate for project impacts. As part of this comprehensive environmental work, Mr. Alevras has represented HDR's clients before federal and state regulatory staffs and, when necessary, served as an expert technical witness in contested cases.

RELEVANT EXPERIENCE

NYCDEP, Turbidity EIS, NY. Mr. Alevras prepared draft section of this EIS related to fishery resources and benthic invertebrate resources in Kensico Reservoir. Mr. Alevras also evaluated stream habitat in the Esopus Creek downstream of Ashokan Reservoir and reviewed fish sampling data from this river reach.

California Department of Water Resources, Bay Delta Conservation Plan EIR/EIS, Sacramento, CA. Mr. Alevras prepared draft sections on the potential impact of the proposed plan on fishery resources. Mr. Alevras was in charge of the preparation of basic life history information on the species selected for assessment.

Transmission Developers Inc., Champlain Hudson Power Express, Marine Routing Survey, NY. As project biologist, Mr. Alevras has been involved in various aspects of the siting and impact assessment for a proposed 1000mw DC submarine transmission cable running from the Canadian border through Lake Champlain and the Hudson River Estuary to New York City. The cable was sited to minimize potential adverse environmental impacts, including an overland segment to avoid PCB remediation work in the Upper Hudson. Inwater sited took into account designated significant habitats, wetlands, submerged aquatic vegetation, endangered species, seasonal biological activity and other important ecosystem characteristics. Mr. Alevras and the HDR staff are working closely with project engineers to refine the route and installation.

USACE - New York District/PANYNJ, Hudson-Raritan Estuary Ecosystem Restoration & Feasibility Studies, NY & NJ. As project biologist, Mr. Alevras prepared portions of a draft Comprehensive Restoration Plan (CRP) for the Hudson-Raritan Estuary study area. He participated in planning meetings with the Corps and reviewed various drafts

and documents related to preparation of the CRP.

USACE - New York District, New York & New Jersey Harbor Navigation Study. As project biologist, Mr. Alevras participated in many planning sessions related to the Harbor Navigation Study (harbor deepening). He prepared sections of the project EIS related to impacts on fishery resources and provided technical review of fishery studies for mitigation related to the deepening work.

USACE – New York District, Dredged Material Management Plan, NY & NJ. Mr. Alevras project manager for a USACE project in the New York/New Jersey Harbor. USACE, in cooperation with state and local interests, he developed the Dredged Material Management Plan (DMMP) for the New York/New Jersey Harbor. This planning function required a Programmatic Environmental Impact Statement (PEIS). HDR was retained to assist USACE in refining and updating the PEIS following initial comments from the DMMP work group. The thrust of the EIS was to present the disposal options and alternatives (options grouped into a course of action) and then evaluate impacts so that the options and alternatives could be compared. The PEIS was a complex presentation of numerous options and alternatives encompassing a broad potential implementation area and covering all major resource categories. The PEIS summarized large databases on aquatic resources, modeling studies, a risk assessment, and other elements. This project also included summarizing comments received on the DEIS in a Pulic Involvement Appendix.

NJDOT, Office of Maritime Resources, Case Study Analysis - Dredged Material Management, NJ. As project manager, Mr. Alevras managed the dredged material processing facility study for upland placement where the limiting factor was availability of placement sites and the rate at which processed material could be placed to permit continuous dredging, processing, and placement. In-barge processing minimized handling of dredged material.

Shanty Hollow Corporation, Draft Environmental Impact Statement Preparation, Hunter Mountain Ski Area, Hunter, NY. As project biologist, Mr. Alevras prepared the DEIS incorporating data and analyses prepared by other consultants. HDR was retained to revise and update a Draft Environmental Impact Statement (DEIS) prepared for a permit application to NYSDEC for water withdrawal and stream disturbance in Schoharie Creek. Mr. Alevras also prepared new material on the impact of water withdrawal on aquatic resources with emphasis on the trout fishery. He participated in negotiating sessions with NYSDEC on the permit conditions and made presentations to stakeholder groups regarding the permit action. Mr. Alevras is prepared the responsiveness summary for comments received on the DEIS and prepared the Final EIS.

Millennium Pipeline/LeBoeuf, Lamb, Greene & MacRae, LLP, Environmental Studies & Permitting for Pipeline Crossing of Haverstraw Bay, NY. As project biologist, Mr. Alevras participated in consultations with state and Federal resource agencies and local environmental protection groups throughout the preparation and review of the consistency determination. HDR was retained by Millennium's environmental law firm, LeBoeuf, Lamb, Greene, & McRae, to assist in the preparation of a Coastal Zone Consistency Determination (CZM) for the pipeline crossing of Haverstraw Bay on the Hudson River. The 2.3-mile Hudson River crossing passes through state-designated Significant Coastal Fish and Wildlife Habitat governed by a stringent "habitat impairment test,"

which had to be addressed in the consistency determination. Because of the designation of significant habitat, the consistency determination required a detailed environmental assessment specific to the Hudson River and Haverstraw Bay. In addition to the preparation of the CZM document, Mr. Alevras prepared a summary of available fish resource information for the area for use by the Federal Energy Regulatory Commission (FERC) in the preparation of their Essential Fish Habitat (EFH) assessment. He also prepared a review of the comments and recommendations contained in National Marine Fisheries Services' (NMFS) Biological Opinion and response to FERC's EFH assessment. Mr. Alevras responsibilities also included creating background information and a review, with recommendations, on alternative environmental (construction) windows for pipeline construction. He organized sections of a separate CZM determination for an alternative pipeline route through the Village of Croton-on-Hudson and across the Croton River, and prepared an assessment of the effects of underwater blasting and the preparation of a blasting plan to minimize impacts to fish.

NYCEDC, East River Waterfront Development Study, New York, NY. Mr. Alevras was project manager for HDR on a planning study undertaken by NYCEDC for redevelopment of a 2 mile segment of the East River shoreline in Lower Manhattan. HDR was part of a consultant team that evaluated options for providing waterfront access, open spaces and amenities along the shoreline. The study area includes a number of existing piers, some of which are in poor condition and will likely be redeveloped. Mr. Alevras' primary role on the study team was to evaluate aquatic resource issues, coordinate with team architects on the effects of inwater structure on aquatic habitat, propose techniques to enhance aquatic habitat value using inwater structures and work with study attorneys on permitting strategies related to aquatic resources. HDR is continuing its involvement in this project in the design stage. Mr. Alevras has continued with this project in the detailed design stage. He has provided recommendations and guidance for the design of an Eco-park which is part of the conversion of Pier 35 to a public access area.

NYCEDC, East River Ferry Landings - Environmental Assessment & Permitting, Manhattan, NY. Mr. Alevras was the project manager for a number of efforts involving ferry terminal development. For the South Ferry Terminal, Mr. Alevras managed a field sampling program for aquatic resources in the vicinity of the existing ferry terminal to establish a baseline for the assessment of a new terminal. The proposed design was used as a basis for the assessment, which was incorporated into a draft EIS for the project. The assessment included an evaluation of the effects of marine borers on the existing and new in-water structures. Mr. Alevras also evaluated the effects of new, temporary ferry facilities on the East River on aquatic resources. This was followed several years later by an environmental assessment for permanent ferry facilities at these locations.

PANYNJ, Design, Environmental Assessments and Permitting Term Contract, Subchannel Placement Cells, Newark Bay, NJ. Mr. Alevras was project manager for a project proposed by the PANYNJ involving subchannel placement cells in Newark Bay for the disposal of contaminated dredged material. HDR was a third-party contractor working for the U.S. Army Corps of Engineers, under contract to PANYNJ. HDR prepared the Draft Environmental Impact Statement (DEIS) following scoping sessions with the public and resource agencies. The EIS focused on impacts on aquatic resources during construction of the cells and the discharge of dredged material into the cells. The EIS evaluated dredged material disposal

alternatives, the need for capping the cells, and an implementation and monitoring plan. HDR drafted the 404(b)1 guidelines evaluation.

PANYNJ, Environmental Impact Statement for the Goethals Bridge Replacement Program, Staten Island, NY - Elizabeth, NJ. Mr. Alevras is supervising the essential fish habitat studies for the HDR team assisting the PANYNJ to complete the NEPA Environmental Impact Statement for the proposed replacement of the Goethals Bridge that connects northwestern Staten Island, New York to Elizabeth, NJ. Specific tasks include the characterization of existing conditions for the natural resources and surface water resources; assessment of impacts associated with the proposed demolition of the existing bridge and construction of a new bridge; ecological community mapping; conducting an essential fish habitat evaluation; assisting with the public outreach and scoping component; and completing the permitting requirements.

PANYNJ, Staten Island Bridges Program, NY & NJ. Mr. Alevras served as a subconsultant when HDR performed the ecological assessment of environmental impacts of the expansion proposed by PANYNJ. This assessment included an evaluation of sediment quality data and a review of the sampling and chemical bioassay testing program for contaminated sediments. HDR was also responsible for the evaluation of impacts associated with dredging and for mitigation measures to minimize sediment discharges during construction activities. Mr. Alevras prepared an assessment of the potential impact of a new Goethals Bridge span on aquatic resources.

The Related Companies, River Walk Development Project, East River Waterfront, NY. As project biologist, Mr. Alevras prepared the aquatic analysis portion of the River Walk environmental impact statement (EIS) under the City of New York Environmental Quality Review Act (CEQRA). River Walk was a proposed residential-commercial development on a 16-acre, pile-supported platform, to be built between Manhattan's 17th and 24th streets on the lower East River. The aquatic studies evaluated the project effects on currents, sedimentation, water quality, and aquatic ecology of the East River. HDR conducted sampling for fish and invertebrates in the project area and at nearby reference stations. HDR also conducted bathymetric and tidal current studies in the project area to support a modeling effort to predict future sedimentation with different project configurations. HDR reviewed historical information on dredging and changes to the area as the former shipping facilities were abandoned over time. Mr. Alevras worked with project architects to develop a design that controlled currents, sedimentation, and water depth to maximize habitat for striped bass and other fish.

NYSDOT, Westway Aquatic Life Studies, Hudson River, NY. Mr. Alevras was project biologist for aquatic life studies in the Hudson River along the west side of Manhattan. These studies and the impact assessments involved the effects of a 200+ acre landfill on the aquatic resources of New York Harbor, with emphasis on striped bass. The project included the development of habitat enhancement measures to mitigate for losses of habitat due to the landfill. Mr. Alevras provided technical review of USACE studies of project effects. This project included expert testimony on behalf of the NYSDOT at a trial in Federal Court challenging the validity of the Corps of Engineers permit for the project.

S.K. Services, Seabord Site for the Beneficial Use of Dredged Material, Hackensack, Meadowlands, NJ. Mr. Alevras was project manager for an effort in which SK Services developed a land remediation project utilizing

processed dredged material to cap the Seaboard site in the Hackensack Meadowlands. The project involved state and Federal permitting for in-water construction and fill placement in wetlands. The wetlands were delineated and a functional analysis was performed. On- and off-site mitigation alternatives were evaluated and negotiated with resource agencies. The project also included monitoring dredging operations and evaluating temporal restrictions on dredging to protect nesting herons. Dredged material was collected for chemical analysis and leachate testing at a contracted laboratory.

Northeast Utilities Service Co., Northfield Mountain Pumped Storage Facility, Northfield, MA. Mr. Alevras was project manager for the evaluation of downstream fish passage at Northeast Utilities Service Co. (NUSCO) Northfield Mountain Pumped Storage Facility. Mr. Alevras was responsible for the supervision of the initial intensive field effort through report preparation and presentations to an interagency review committee for migratory fish on the Connecticut River. Mr. Alevras provided technical input and worked with NUSCO in developing presentation strategies. Major studies at the site included entrainment estimates, population impacts assessments and the testing of a barrier net to reduce entrainment of Atlantic salmon smolts. The barrier net is now a standard operating procedure at the plant during spring migration.

Niagara Mohawk Power Corporation, Hydropower Licensing, NY. Mr. Alevras was project manager for field studies and the preparation of environmental reports for the licensing of hydroelectric projects. The work incorporated the results of various studies by HDR, the project sponsor, and other consultants. The impact assessments included redevelopment at existing dams, new developments and relicensing of existing sites with various capacity additions and operational changes. The hydro assignments included participation with the project sponsor in the development of mitigation, protection and enhancement measures for various natural resource categories. A major aspect of this work included participation in negotiations on client's behalf with state and Federal regulators on the scope of studies and mitigation/enhancement measures. The bulk of this work was performed for Niagara Mohawk Power Corporation in the rivers of upstate New York, including the Adirondacks.

Consumers Power Co., Impingement and Entrainment Assessment, Lakes Erie and Huron, MI. Mr. Alevras was project manager for an assessment of the effects of impingement and entrainment mortality at Consumers Power's J.R. Whiting Plant on the populations of four species of fish in the Western Basin of Lake Erie and for impingement studies at D.E. Karn and J.C. Weadock Plants at the mouth of the Saginaw River on Lake Huron. These studies included the assessment of the effectiveness of barrier nets developed and implemented by Consumers Power. This assignment included expert testimony before the Michigan Water Resources Commission with regard to effects of the J.R. Whiting Plant on the fishery resources of Lake Erie and the need for mitigation to reduce intake effects.

Consumers Power Co., Ludington Pumped Storage Plant, Lake Michigan, MI. Mr. Alevras was part of a team that evaluated the population level and ecosystem impacts of fish mortality at the Ludington Pumped Storage hydroelectric plant. Mr. Alevras prepared expert testimony and reviewed opposing briefs as part of a resource damages suit in state court in Michigan. Mr. Alevras also reviewed the design of a barrier net to protect fish at the plant intake.

Electric Power Research Institute, Population and Ecosystem Level Impact Assessment Methodology, Palo Alto, CA. Mr. Alevras was project manager for the development of a manual with methodology for assessing ecosystem effects related to intake of cooling waters for the Electric Power Research Institute. This project included a review of cooling system effects on lower trophic levels and techniques for quantitative assessment of entrainment and impingement effects on fish populations and aquatic communities.

Publications and Presentations

The estimation of fish impingement at Indian Point Units 1 and 2. Before the U.S. Atomic Energy Commission, Docket No. 50-247, 1973.

Occurrence of a lookdown in the Hudson River. New York Fish and Game Journal, Vol. 20, No. 1, 1973.

Status of air bubbler fish protection at Indian Point Station on the Hudson River. In: Proceedings of the Second Entrainment and Intake Screening Workshop. Electric Power Research Institute, Publication No. 74-049-00-5, 1974.

Possibilities for assessment of the effects of power plant operation at the ecosystem level. Proc., 4th National Workshop on Entrainment and Impingement, Chicago, Ill., 1978. (with E.K. Pikitch, J.M. Hillegas, Jr., and D.T. Logan)

Fisheries survey of the lower Hudson River in the vicinity of Manhattan 1979-1980. Proceedings of the Hudson River Environmental Society Meeting, September 1-2, 1981, Norrie Point, New York. (with C.B. Dew, J.H. Hecht, and S.G. O'Connor)

Fishery mitigation in an estuarine environment. The Fourth Symposium on Coastal and Ocean Management, Omni International Hotel, Baltimore, Maryland, July 30-August 2, 1985. (with D.M. Bell, S.H. Arnold, K.A. Abood, and G.R. McVoy)

Analysis of habitat characteristics and fisheries abundance characteristics in habitat-loss mitigation planning. Estuaries: The Second Water Quality and Wetland Management Conference, sponsored by the Louisiana Environmental Professionals Association, New Orleans, La., October 24-25, 1985. (with D.M. Bell, K.A. Abood and G.R. McVoy)

Biological Context and Consequences of the Great Lakes Initiative. Clearwaters pp. 21-25. 1993. (with B.L. Lippincott and S.G. Metzger)

Incorporating Aquatic Habitat Valves in Working Waterfronts. The Coastal Society, 21st International Conference. June 29-July 2, 2008. (with Sarah Zappala)

Awards

Professional Associate (2009)

Kelly A. Brandt

Monthly Reporting

Kelly Brandt is an Administrative Assistant at HDR. She has been involved with projects that include environmental compliance and environmental reporting. Ms. Brandt has been responsible for organizing and submitting daily and monthly work reports related to compliance. She has also provided support to the environmental compliance team.

EDUCATION

University of Maryland, University College, May 2010. Adelphi, MD. Bachelor of Science Degree. Curriculum: Criminal Justice and Forensic Science; Graduated with Honors.

REGISTRATIONS

N/A

CERTIFICATIONS

- OSHA 10-hour
- Adult CPR and Standard First-aid

PROFESSIONAL MEMBERSHIP

N/A

RELEVANT EXPERIENCE

Tappan Zee Constructors / New York State Thruway Authority, The New NY Bridge (Tappan Zee Hudson River Crossing), Westchester-Rockland County, NY. Administrative Assistant. The New NY Bridge will replace the existing Tappan Zee Bridge crossing which handles more than 138,000 vehicles every day—far more than its design capacity. The new twin bridges are over 3 miles long and will cross the Hudson River at one of its widest points to connect Rockland and Westchester counties. Key features of the new bridge include twin iconic cable-stayed main spans with 1,200-foot center spans. Each bridge carries four general traffic lanes plus shoulders and extra-wide emergency lanes. The bridge will have new temporary tolling facilities with AETC (All Electronic Toll Collection) and a shared-use path (dedicated bicycle and pedestrian) on the northern bridge with scenic overlooks. The project implements Intelligent Traffic Systems (ITS) and Advance Traffic Management Systems (ATMS) to improve the flow of vehicle traffic. The bridge is designed for a 100-year service life and will be mass-transit-ready for bus rapid transit without strengthening, or for commuter or light rail on a separate structure constructed between the two highway bridges. The project team will follow strict environmental performance commitments to protect the Hudson River estuary.

The New York State Thruway Authority selected design-build as the delivery method for this project to meet an aggressive schedule. HDR is the lead designer, and a subcontractor for Tappan Zee Constructors LLC, a consortium of Fluor Enterprises, American Bridge Company, Granite Construction Northeast, and Traylor Bros. Detailed design includes deep foundations, cable-stayed main span and girder/sub-stringer approach span structures, pre-cast substructure and superstructure components and highway design including alignments, AETC tolling, ITS, utilities and facility design. HDR is also leading significant Environmental Compliance activities including underwater noise, water quality and airborne air/noise monitoring.

Kelly Brandt's role on the project is to submit environmental daily work reports, transmit and submit monthly environmental compliance reports, and provide support to the environmental compliance team.

(Construction Cost: $3.14 billion. Dates: 2013-2018)

Oppenheimer & Co. Inc., Fishkill, NY. Title: Client Service Associate.

Job Duties: Performed are a variety of clerical duties and other tasks including face-to-face client interaction, time management, spreadsheet construction, research, report generation, and problem solving. Assisted management and financial advisors in various areas of need including phones, e-mail composition, fiscal reports, and customer contact. Highly knowledgeable in the operation of the following systems: phone, post mail, intranet, internet, firm-based operating system, various Microsoft office programs, and various stock market based operating programs. Act as client to broker liaison including, but not limited to, task management, memos, correspondence and other documents.

Hudson Valley Volkswagen, LLC, Wappingers Falls, NY. Title: Receptionist. Job Duties: Greet customers, appointing sales persons to customers, answering questions, directing phone calls to appropriate departments, reconciling money paid as deposits and COD's, record keeping of customer names and vehicle stock. In addition to various clerical duties performed, new car inventory was received and processed which included assigning of stock numbers and file of titles on a daily basis. Trained to fill out and complete billing and delivery paperwork for new and used cars for both customers and wholesalers. Also NYS Department of Motor Vehicle trained and registered to complete successful NYS registration tasks.

Kingston Buick, Pontiac, GMC. Kingston, NY. Title: Service Consultant. Job Duties: Accountable for receiving vehicles from customer and documenting complaints or services needed in the form of a repair order. Other duties include such tasks as selling needed repairs and services, obtaining sales goals, answering phones, making appointments, filing, determining paid hours per job in compliance with warranty and book times for technicians, and ordering parts. Decision making on behalf of the customer, acting as a liaison between the customer and manager and/or manufacturer, handling face-to-face customer service, including monetary transactions and problem solving, and knowledge of the working mechanics of vehicles.

Heart Volkswagen, LLC. Kingston, NY. Title: Warranty Administrator. Job Duties: Warranty coding of warranty cover Repairs. Approve Technician labor hours in relation to Manufacturer guidance. Act as a liaison between Manufacturer Representatives, Technicians, and Customers to resolve customer complaints. Assume the role of Service Consultant when other Consultants unavailable or on vacation.

Ann Keen

HAER Plans

EDUCATION
M.A., Art History, Rutgers, 2007

B.S., Art History, Kendall College of Art & Design, 2001

REGISTRATIONS
Federal Railroad Administrations Roadway Worker Protection, United States National Registration, No. 893394801463

MnDOT Precertification
12.4 Architectural History

ND SHPO Permitted

TxDOT Precertification
2.8.1 Surveys, Research & Documentation
2.11.1 Historical & Archival Research

PROFESSIONAL MEMBERSHIPS
Society of Architectural Historians (SAH), Member, 2007-2015

HDR TENURE
3 Years

INDUSTRY TENURE
13 Years

Ms. Keen brings 13 years of experience in historical studies with a particular emphasis on the built environment. She meets the Secretary of the Interior's Professional Qualification Standards for architectural history. Her experience includes architectural and historic sites surveys, National Register of Historic Places (NRHP) eligibility evaluations and nominations, Historic American Buildings Survey (HABS) documentation, Historic American Engineering Record (HAER) documentation, preservation plans, historic structure reports, conditions assessments, and archival research. Ms. Keen has experience on projects in numerous states for Departments of Transportation, the U.S. Army Corps of Engineers (USACE), and a range of energy providers, as well as other governmental and private entities. She has also completed projects requiring Federal Energy Regulatory Commission (FERC) certification. Ms. Keen has been trained and is experienced as a bridge inspector's assistant and is a registered Federal Railroad Administration roadway worker.

PROFESSIONAL EXPERIENCE

Able Pump Station Architectural Recordation, Dallas, Texas/USACE, 2014
As mitigation for the proposed demolition of a 1929/1953 pump station on the Trinity River, Ms. Keen photographed Able Pump Station and documented its design, function, and historical significance to HABS/HAER standards.

Camp Pendleton Architectural Survey, Oceanside, California/NAVFAC Southwest, 2014
Ms. Keen worked on a team that surveyed 195 and resurveyed 653 buildings and structures at Marine Corps Base Camp Pendleton for NRHP eligibility. She also conducted archival research in support of the project.

Iron Horse Wind Farm Intensive Cultural Resources Survey, Phase 1B, Ford and Gray Counties, Kansas/Renewable Energy Systems Americas, Inc., 2014
Ms. Keen evaluated a 1920s farmstead for NRHP eligibility in support of a proposed 360 MW, 100-turbine wind farm. As part of the project, she also researched and authored the report's historic context.

Origins Wind Farm Intensive Cultural Resources Survey, Phase 1B, Carter and Murray Counties, Oklahoma/Renewable Energy Systems Americas, Inc., 2014
Ms. Keen evaluated four agriculture-related resources, one domestic resource, and a cemetery for NRHP eligibility in support of a proposed 200 MW, 75-turbine wind farm. As part of the project, she also researched and authored the report's historic context.

Rail Communications Towers Background Investigations, Phase 1, Multiple States/BNSF, 2014-2015
Ms. Keen conducted literature and background searches to identify all archaeological and historical resources within areas of potential effects prior to construction of more than 30 railroad communications towers in Arkansas and Texas. She also conducted research on NRHP-eligible and NRHP-listed resources for tower projects in Minnesota and Oregon. Research and resultant reports supported submission of Tower Construction Notification System/E-106 filings with the Federal Communications Commission.

Tri-County Bare Steel Replacement NRHP Evaluation, Multiple Counties, Pennsylvania/Columbia Gas Transmission, A NiSource Company, 2014
Ms. Keen documented standing structures 50-years or older for a gas pipeline project extending 31 miles through three counties in southwestern Pennsylvania. In accordance with FERC requirements, Ms. Keen surveyed and evaluated 83 structures in the proposed project's right of way for NRHP eligibility. She authored the corresponding report, including a geography-based historic context, and completed 68 PA SHPO state historic resource inventory forms.

Fracture-Critical Bridge Inspections, Multiple Locations, Texas/Texas Department of Transportation, 2013-2014
Ms. Keen assisted in the assessment and documentation of 12 fractural-critical bridges in Dallas, Fort Worth, Houston, Llano and Port Arthur, Texas, and near Logansport, Louisiana. Bridges were primarily truss, tub girder, and plate girder types and required close examination for potential cracks, stress points, and deteriorating conditions.

Killdeer Truck Bypass Cultural Resource Inventory, Class III, Dickinson, North Dakota/North Dakota Department of Transportation, 2013-2014
Ms. Keen led a field survey and evaluation of 29 properties with subsidiary structures 50 years or older for NRHP eligibility. She also researched and authored the associated historic context and helped develop an iPad-based field inventory system to facilitate completion of ND SHPO state historic resource inventory forms.

Cayuga Road Cultural Resources Survey, Phase I, Ottawa County, Oklahoma/Red River Archaeology for Oklahoma Department of Transportation, 2013
Ms. Keen evaluated standing structures for NRHP eligibility in support of a proposed road improvement project southeast of Wyandotte, Oklahoma. Resources included standing structures and a cemetery associated with the Society of Friends' administration of the Seneca Reservation in the 1870s. Ms. Keen also completed associated OK SHPO state historic resource inventory forms.

Dickinson Grade Separation - Option 5 Architectural Survey Addendum, Dickinson, North Dakota/North Dakota Department of Transportation, 2013
Ms. Keen completed a field survey and NRHP eligibility evaluation of a 1950s residential neighborhood necessitated by NDDOT's proposed extension of a two-lane road in support of a rail grade separation project on Dickinson's west side. She also conducted historical research and completed associated ND SHPO state historic resource inventory forms.

Marine Fisheries Enhancement, Research, and Science Center Cultural Resources Survey, Phase I, Calcasieu Parish, Louisiana/Louisiana Department of Wildlife and Fisheries, 2013
Ms. Keen conducted parcel research and authored the report's historic context in support of a proposed fisheries facility. The context focused on prior land use of the parcel and the development of the neighboring Intracoastal Waterway.

Robert Quiggle, M.A., RPA

Senior Archaeologist

EDUCATION

M.A. Anthropology/ Archaeology, State University of New York at Binghamton, 2005

B.S. Anthropology/ Archaeology, Mercyhurst College, 2003

REGISTRATIONS

Registered Professional Archaeologist (RPA)

Society for American Archaeology

REGISTRATIONS

Advisory Council on Historic Preservation Section 106 Essentials Course, July 2007, New York City, NY

Mr. Quiggle meets the Secretary of the Interior's Professional Qualification Standards for Archaeology

INDUSTRY TENURE

8 Years

As a Registered Professional Archaeologist, Mr. Quiggle has developed and directed strategies to successfully address issues related to the identification, management, and preservation of archaeological, historical, and cultural resources at energy projects across the United States. Mr. Quiggle has led consultation pursuant to Section 106 of the National Historic Preservation Act (Section 106) with a variety of stakeholders and regulatory agencies, including the Advisory Council on Historic Preservation (ACHP), the U.S. Army Corps of Engineers (USACE), the Federal Energy Regulatory Commission (FERC), State Historic Preservation Officers (SHPO), and federally recognized Indian tribes. Mr. Quiggle's experience includes developing, overseeing and implementing cultural resource study plans, archaeological monitoring plans, resource treatment plans, data recovery plans, Historic Properties Management Plans (HPMP), and components of environmental assessments and impact statements prepared pursuant to the National Environmental Policy Act (NEPA).

RELEVANT EXPERIENCE

Champlain Hudson Power Express HVDC Transmission Project, New York State. Since 2009, Mr. Quiggle has managed the development and completion of complex cultural resources studies along more that 300 linear miles of the proposed transmission line alignment, including alternatives that extended along Long Island Sound and into the State of Connecticut. These studies included the identification of over 600 recorded historic and archaeological resources, ranging from National Historic Landmarks to reported shipwrecks within Lake Champlain, the Hudson River, and Long Island Sound. In his capacity as a Registered Professional Archaeologist, Mr. Quiggle provided expert witness testimony to the New York State Public Service Commission in support of the project's Article VII Certificate of Environmental Compatibility and Public Need. He also developed section of the Environmental Management and Control Plan to address in-field best management practices during project construction. Mr. Quiggle is currently providing strategic guidance to the developer and the U.S. Department of Energy (DOE) regarding Section 106 compliance. He is the DOE's designated non-federal representative for informal consultation pursuant to Section 106 for the project.

Oswegatchie River Hydroelectric Project, Relicensing Study Plan Development, St, Lawrence County, New York. Mr. Quiggle served as the technical lead for cultural resource issues associated with the relicensing of Brookfield Renewable Energy's Oswegatchie River Hydroelectric Project in the Adirondack region of New York. In consultation with Indian tribes and the SHPO, Mr. Quiggle developed study plans for completing the historical and cultural resources assessment at the project's six developments, spanning more than 90 river miles. By combining archaeological and geomorphological investigations, the cultural resources study eliminated the need for subsurface testing and resulted in considerable cost savings to the client. Mr. Quiggle prepared an HPMP to address project effects on historic powerhouses and archaeological resources associated with the project.

Antero Resources Pipeline Projects, Ritchie County, West Virginia. Mr. Quiggle developed and oversaw cultural resources studies to identify historic properties and assess adverse effects associated with the USACE's potential issuance of a permit pursuant to Section 404 of the Clean Water Act. Working with a local subconsultant, Mr. Quiggle coordinated field activities that included archaeological sensitivity assessments, background investigations, and field testing at proposed stream and wetland crossings. By teaming with a local subconsultant, Mr. Quiggle was able to expedite the studies to meet an aggressive project deadline and minimize costs associated with the field effort.

New York State Historic Preservation Act Compliance Support, Statewide. From 2006 through 2008, Mr. Quiggle provided support to the New York Power Authority's (NYPA) Agency Preservation Officer pursuant to NYPA's compliance with Section 106 and Section 14.09 of the New York State Historic Preservation Act. Mr. Quiggle provided technical guidance and recommendations for a number of construction, modification, and replacement projects funded by NYPA. These projects ranged from wetland mitigation projects to HVAC installation at a National Historic Landmark. Mr. Quiggle served as the technical lead for consultation with the SHPO to ensure that the requirements of Section 14.09 and Section 106 were met by NYPA and that critical infrastructure upgrades were achieved at facilities across the state.

Niagara Power Project HPMP, Niagara and Erie Counties, New York. Mr. Quiggle prepared the HPMP for NYPA's Niagara Power Project, one of the largest-capacity hydroelectric facilities in the United States. Working as part of NYPA's relicensing team; Mr. Quiggle served as the owner's technical lead for cultural resource studies and consultation with Indian tribes, the ACHP, FERC staff, and the SHPO. For this project, Mr. Quiggle worked oversaw archaeological field studies and co-authored the Phase IB and Phase II reports with the principal investigator. Following the license order, Mr. Quiggle initiated development of the draft HPMP and spearheaded consultation with the SHPO and Indian tribes. Based on the comments received during consultation, he authored an HPMP that addressed ongoing and potential project effects to historic properties, including archaeological resources, historic buildings and structures, National Historic Landmarks, and historic districts within the project's APE. The HPMP contains detailed consultation protocols, descriptions of previous and recommended studies, descriptions of identified historic properties, and management measures for the treatment of historic properties throughout the term of the 50-year FERC license for the Niagara Power Project.

Tri-Lakes Reliability Transmission Line Project, Cultural Resource Investigations and Monitoring Plan, St. Lawrence County, New York. Mr. Quiggle served as NYPA's technical lead for extensive cultural resource investigations and SHPO consultation required in advance of construction along the 26-mile-long Tri-Lakes Reliability Transmission Line Project, located in St. Lawrence County, New York. Mr. Quiggle prepared Requests for Proposals (RFPs) for the required testing; reviewed proposals; coordinated field investigations; and reviewed reports for a series of Phase IA, IB, and Phase II investigations. Working closely with both NYPA staff and outside consultants, Mr. Quiggle ensured that the complex and extensive studies required prior to construction were completed in advance of project deadlines. To address the SHPO's concerns regarding this undertaking, he also developed a detailed

Monitoring and Protection Plan to facilitate vehicle access to the transmission line right-of-way. The Monitoring and Protection Plan was developed through Mr. Quiggle's consultation with the SHPO and was a vital document that allowed the Tri-Lakes Project to proceed on target to meet critical, in-service deadlines. Implementation of the plan required coordination and field visits with consultants, NYPA environmental staff, construction crews, and environmental inspectors. Mr. Quiggle and NYPA Geographic Information Systems (GIS) personnel visited identified archaeological sites to demarcate boundaries and provide technical guidance on areas to be avoided during construction.

Angela Stowe

Contaminated Materials

EDUCATION

B.S., Geological Engineering, Michigan Technological University, 2003

REGISTRATIONS

Engineer in Training, 2003

OSHA HAZWOPER 40 Hour Training

American Institute of Professional Geologists (AIPG) #1498

Ms. Stowe is a Senior Project Manager in the Environmental and Resource Management Group in the Pearl River, New York office. Ms. Stowe has worked extensively on projects in the Voluntary and Brownfield Cleanup Programs and has spent a considerable portion of the last 8 years working on the redevelopment of Hunts Point. She has managed projects and contracts for NYCEDC as well as projects for NYCDEP and private clients. Projects have included multiple site characterization, investigation, and remediation activities. Her responsibilities include client, regulatory agency, and contractor liaison, management/coordination of sub-contractors, construction/remediation oversight, and the preparation of Phase I ESA, Phase II Reports, Remedial Investigative Reports (RI), Remedial Action Work Plans (RAP), Site Management Plans, bid specification documents, Final Engineering Reports (FER) and Site Management Plans (SMPs). Relevant project experience is provided below.

RELEVANT EXPERIENCE

New York City Economic Development Corporation (NYCEDC), Redevelopment of Multiple Sites across the Hunts Point Food Distribution Center, Bronx, NY. Ms. Stowe has managed and been involved in the redevelopment of multiple sites within the former Hunts Point Manufactured Gas Plant. She has managed site characterization and investigation, geotechnical borings, waste removal, waste disposal, and construction activities to ensure environmental compliance with New York State Department of Environmental Conservation (NYSDEC) approved work plans and site management plans (SMPs). Ms Stowe currently serves as the contract manager of HDR's NYCEDC Toxics Retainer for Environmental Testing, Remediation and Monitoring. Under this contract Ms. Stowe manages multiple environmental site assessments as well as remedial investigations, designs and implementations. She annually oversees the inspections and certifications required under the Voluntary Cleanup Agreement for six closed NYSDEC Voluntary Cleanup Program sites.

New York City Economic Development Corporation (NYCEDC), Yankee Stadium Parking Lots 5 and 6, Bronx, New York. Ms. Stowe was the project manager for the investigation and remediation of the former Yankee Stadium parking lots 5 and 6. Activities included the preparation and implementation of a Remedial Investigation Work Plan and the subsequent Remedial Action Work Plan. The remedies included the installation of an AS/SVE system and bioremedial wells integrated into the final redevelopment of the Site as a Skate Plaza and Playground. Ms. Stowe also managed the operation and maintenance of the remedial system under NYSDEC approved plans.

Solar One Inc. Subsurface Geotechnical, Environmental, and Geothermal Investigation, New York, New York. Ms. Stowe was the project manager for the subsurface investigation completed to address geotechnical, environmental, and geothermal conditions at the Manhattan site. The redevelopment of the site and construction of the first "carbon

net-zero" building in New York City is complicated by the presence of historic fill and contaminants, remnants of a former manufactured gas plant.

Albertson Area Plume, NYSDEC Standby Engineering Contract (D006129), Albertson, NY. Project Manager. Ms. Stowe is a geologist and project manager who has provided the quality control review for the geophysical survey at the Alberston Area Plume track down site characterization—conducted on several properties located south of the Albertson Water District supply well field. In addition to the geophysical survey, the site characterization includes membrane interface probing, soil and groundwater probe sampling, and soil gas sampling. The project duration spans July 2009 through March 2010. Total contract value is approximately $100K.

USACE Kansas City District/USEPA Region 2 - Chemical Insecticide Corporation Superfund Site, Edison, NJ. Construction & Field Inspector. Ms. Stowe was involved in the field quality control audits in support of Long Term Response Action (LTRA) and assessment as part of the Remedial Design of OU4 – the former Chemical Insecticide Corporation (CIC) Superfund site in Edison, NJ. The project costs are $1.1M.

New York City Economic Development Corporation (NYCEDC), Redevelopment of Willets Point, Queens, New York. Ms. Stowe was involved in the soil, groundwater and infrastructure characterization of the Willets Point area. Ms. Stowe was additionally responsible for the organization and submission of the Opinion of Probable Cost for the demolition, remediation, infrastructure, construction, and building foundations for proposed worst case development scenarios. She compiled multiple estimates from multidisciplinary teams of engineers and scientists to produce one comprehensive document. Ms. Stowe also assisted with the preparation of the Hazmat chapter of the Willets Point EIS and the Willets Point Blight Study.

Nyack Ice House, Nyack, New York. Ms. Stowe has been responsible for oversight of all on-site investigations as well as sampling activities. These activities have included monitoring well installation, UST removal, post excavation sampling, soil sampling, ground water sampling, surface water sampling, soil gas point installation, sub slab gas sampling, and soil gas sampling. She has also assisted in data analysis and in report preparations.

Yonkers Parking Authority, Yonkers, New York. Ms. Stowe assisted in the installation of multiple permanent sub slab soil gas sampling points in various buildings surrounding the area of concern. She then assisted in the sampling of those points using Summa® canisters to determine the impact to the surrounding buildings.

Lowes, Orangeburg, New York. Ms. Stowe assisted in the installation of sub slab soil gas sampling points. This installation included coring of the existing slab and the subsequent installation of sampling points that would be utilized for sampling activities.

Harrison Landfill, Harrison, New York. Ms. Stowe was involved in quarterly ground water and surface water sampling activities at the landfill. These activities included the sampling of perimeter monitoring wells and surface water and sediment locations in and around the landfill used to monitor any impacts the landfill may have to sensitive receptors outside

the capped area.

Duffy Avenue Landfill, Long Island, New York. As a member of the HDR team, Ms. Stowe responsibilities included the installation of temporary soil gas sampling points, determining appropriate sample locations and landfill gas monitoring.

Bloomingdale Warehouse LLC, Bloomingdale, New Jersey. Ms. Stowe responsibilities included delineation of a fuel oil product plume which included oversight during the installation of monitoring wells, on site and off site well sampling, well gauging, data evaluation and site assessment. She has also been responsible for in-situ river bank soil sampling in order to determine extent of impact, and remedial course of action.

NYCDEC, Sediment Sampling and Core Analysis, New York, NY. Ms. Stowe has overseen the coring, logging and sampling of New York Harbor sediments on site as well as logged and sampled sediment cores in a laboratory setting. She was responsible for writing geologic descriptions, as well as identifying any stratification present for sampling purposes.

Siemens Power Distribution-Transmission, Sayreville. New Jersey. Ms. Stowe's responsibilities have included in-situ and stockpile soil sampling to classify soils for disposal, and the investigation of geophysical anomalies resulting in the excavation and removal of impacted soils and "dumped" material. She has also assisted with data preparation and analysis.

Joseph Cassone

Dredging and Pile Driving Monitoring

EDUCATION

M.S. Environmental Systems Analysis and Management: Sacred Heart University

B.S. Natural Resources and the Environment with a Concentration in Fisheries and Wildlife Conservation

REGISTRATIONS

N/A

CERTIFICATIONS

N/A

PROFESSIONAL MEMBERSHIP

N/A

Mr. Cassone has extensive professional experience and training in the fields of natural resources and environmental science with a specific focus on water quality monitoring, aquatic biota sampling, and GIS analysis. He also has experience and skill operating boats to conduct scientific surveys.

RELEVANT EXPERIENCE

Field/Laboratory Scientist: May 2014 to Present: Hennigson Durham and Richardson (HDR)

- Conduct environmental monitoring related to new Tappan Zee Bridge construction.
- Operate boats from 16-40ft in length on daily basis to conduct surveys.
- Collect fisheries, water, and sediment samples in NYC area.
- Conservation Assistant: June 2010-May 2014 : Town of Greenwich Conservation Commission
- Administer a variety of non-regulatory programs related to the Town's Natural Resources and Open Space
- Operated boats to reach offshore islands to conduct the Town's Resident Goose Population Stabilization Program
- Used GIS to create inventory of conservation easements, analyze impervious cover, and map coastal flooding.
- Provided planning and project management for a 400 ft sand dune restoration following Hurricane Sandy
- Provide GIS and technical support to local Watershed Management organizations.
- Operate the Mianus River Fishway monitoring program and provide data on River Herring Migration to CT DEEP
- Received a Long Island Sound Futures Fund Grant from to implement an upstream eel passage program.
- Observed and identified the first specimen of the invasive Chinese Mitten Crab in Connecticut.

Principal Investigator: September 2011-May 2013: Sacred Heart University and The Nature Conservancy

- Assessed migratory behavior and survival of silver eels in a water supply reservoir system using radio telemetry.
- Part of a partnership between Aquarion Water Company, CT DEEP, USGS, The Nature Conservancy, and SHU.

Researcher: September to December 2012: Sacred Heart University and Army Corps of Engineers

- Conducted an environmental site assessment at the Hop Brook

Recreation Center in Naugatuck, CT

- Analyzed concentrations of metal of in surface water, macro invertebrate tissue, and stream sediments.
- Assessed forest understory community using standardized methods

Seasonal Fisheries Technician: May 2007-February 2010: CT DEEP Inland Fisheries Eastern District

- Operated and trailered boats from 15 to 25 feet on a daily basis
- Collected fish population samples and relevant environmental data from CT lakes and streams

First Mate: June 2006-July 2013 DJ King Lobster Company

- Setting and pulling of lobster gear and gill nets as well as maintenance of oyster aquaculture equipment.
- Performed physically demanding work for long hours in routinely rough seas aboard a 42 foot lobster boat.

Casey S. Stokes

Water Quality Monitoring

EDUCATION

B.S., Environmental Science, Paul Smith's College, 2006

REGISTRATIONS

N/A

CERTIFICATIONS

HAZWOPER 40-hr

OSHA 10-Hr Safety Training

ACR First Aid, 2008

ACR CPR/AED, 2008

8-Hour USCGA Boaters Safety Course

Certified Diver

PROFESSIONAL MEMBERSHIP

N/A

Mr. Stokes is an Environmental Scientist at the HDR Environmental Measurements Operations Center (EMOC) in Nanuet, NY with extensive experience as a crew chief and crew member on numerous field projects. He is responsible for understanding the scope of a project and implementing the specific tasks as they pertain to field sample collections. He is also responsible for directing field crews in the successful completion of the various tasks particular to the sampling effort. Relevant project experience is provided below.

RELEVANT EXPERIENCE

USACE New York District, Harbor Deepening - Aquatic Biological Survey, NJ & NY. Mr. Stokes was responsible for bottom trawl, ichthyoplankton and benthic macroinvertebrate collection in the field, as well as laboratory ichthyoplankton and benthic macroinvertebrate sort and identification for the USACE New York/New Jersey Harbor Deepening Program Aquatic Biological Survey. The objective of this program was to address navigation improvements, including deepening of existing channels to 50 feet, which is required to provide economically efficient and environmentally sound harbor wide navigation. A primary goal of the Aquatic Biological Survey is to collect data on harbor finfish, shellfish, macroinvertebrates, and water quality with a focus on biological community structure, distribution patterns, and seasonal patterns of habitat use. The information collected has been used in determining the potential biological impacts of deepening existing navigation channels, anchorages, and berthing areas.

Hudson Generating Station Trawl Program, New York. Mr. Stokes worked on the PSEG Hudson Generating Station project where he acted as mate on HDR's research vessel, RV Heather MII, working the hydraulic winches and assisting in all operational trawling procedures. He also identified and measured

NY City Department of Sanitation 2011-2012 Supplemental Aquatic Biological Studies for the East 91St MTS and Proposed Mitigation Sites: South Bronx MTS and Bush Terminal. Project Coordinator. Mr. Stokes was acted as a boat crew chief for several types of sampling gear deployments and collections, including bottom trawl, mid-water trawl, trap net and epibenthic sled ichthyoplankton tow surveys.

USEPA Region 2, Remedial Action Contract - Gowanus Canal Superfund Site, Brooklyn, NY. Mr. Stokes was an integral part of the project team responsible for fish, blue crab and shellfish field collections for toxic chemical analysis. He acted as a boat crew chief for several types of sampling gear deployments and collections, including trawl, gill net, trap fyke net; baited fish traps and hook and line surveys.

Brookfield Financial Properties Inc., One New York Plaza 316(b) Impingement and Entrainment Studies, New York, NY. Mr. Stokes served as field crew chief, conducting both impingement and entrainment studies at One NY Plaza in lower Manhattan. These studies were conducted to study the fish impingement and entrainment rates of the building's cooling water intake system.

Anticostia River TSS Monitoring, Maryland through Washington, D.C. Mr. Stokes was responsible for the water quality monitoring data collection in the Anticostia River while CSX rail crews remove pilings to replace and rebuild a double rail bridge. Mr. Stokes is responsible for adhering to strict EPA sample guidelines and criteria relative to sediment plumes that may be associated with the bridge replacement. All of the water quality samples and data collection is conducted on a real time basis.

USACE - New York Harbor TSS Program. Mr. Stokes was an integral part of the USACE TSS Surveys in New York Harbor and surrounding waterways. This project involves monitoring water quality and total suspended solids (TSS) during dredging operations to determine the spatial structure and temporal dynamics of suspended sediment plumes and estimate the amount of sediment released into the water column for use in modeling applications. This requires real time continuous water quality data collection utilizing state of the art computer controlled in water sampling equipment.

NYCDEP, Kensico Reservoir - Waterfowl Management Program in Upstate New York, Westchester County, NY. As a wildlife technician for the NYCDEP Waterfowl Management Program, Mr. Stokes has been responsible for waterfowl identification and management at several New York City reservoirs. His responsibilities include: identification of avian species resident to New York City Reservoirs, recording technical data, management of gull and waterfowl species by pyrotechnics use and operation of various types of watercraft. Mr. Stokes has three years experience with this project team and has acted as both Crew Chief and crew member for both the morning census and afternoon hazing efforts at Kensico and Hillview Reservoirs. Mr. Stokes has also assisted the field ornithologists on both the West and East of Hudson reservoirs in both pre-dawn and post-dusk surveys.

New York City DEP, DEL-352 Contract Storm Water Management Assessment, Westchester and Putnam Counties, NY. Mr. Stokes has led the field effort for this project. His responsibilities include conducting monthly post-rain event assessment visits to 33 storm water management ponds in the New York City water supply watershed. These visits entail making measurements of water level, vegetation and sediment characteristics, turbidity and other observations.

PANYNJ, JFK Airport Water Quality Monitoring and SPDES Permit Compliance, Jamaica, NY. Mr. Stokes has worked as senior field scientist collecting stormwater samples during precipitation events and maintaining and uploading water quality sondes in the receiving waters of JFK Airport.

Prysmian Power Cables and Systems, Hudson Transmission Project, NY and NJ. Mr. Stokes served as crew chief/member. The Hudson Transmission Project is a 6 mile long 345 kV HVAC transmission line connecting the Bergen Substation in Ridgefield, New Jersey to Con Ed's West 49th Street Substation in New York City. The submarine cable

portion extends for approximately 4 miles and was installed in the Hudson River. Mr. Stokes was responsible for running instrumentation during the installation monitoring, which included collecting real-time TSS data and collecting grab samples at ranging depths.

Transmission Developer's Inc. Champlain Hudson Power Express Project. Transmission Developers Inc. (TDI) is proposing to develop a 1,000 MW HVDC underwater and underground transmission cable that will bring wind and hydro power from the US-Canada border to the New York Metropolitan area. HDR is providing feasibility, environmental, regulatory and engineering support for this cable project. As a senior field scientist on the survey vessel, Mr. Stokes was responsible for the daily oversight of assessing impacts and feasibility of the proposed marine cable route in the both Lake Champlain and the Hudson River.

Kate Estler

Water Quality Monitoring

EDUCATION

Certificate, Geographic Information Systems (Graduate Certificate, Geographic Information Science), University of MD College Park, 2011

Master of Science, Conservation Biology, Antioch New England Graduate School, 2006

Bachelor of Science, Natural Resources (Aquatic Resources), University of Vermont, 2001

REGISTRATIONS

Adult First Aid, United States National Registration

Adult/Child/Infant CPR and AED, United States National Registration

CERTIFICATIONS

Chironomid Taxonomist with Society of Freshwater Scientist (SFS) formerly known as NABS

Ms. Estler is a Senior Environmental Scientist in HDR's Environmental Sciences Group. She has over ten years of experience in the field of environmental sciences, with most of her time spent working in aquatic systems. She has designed and implemented a variety of aquatic field studies associated with roadway, transit and powerline related impacts. Her field expertice includes freshwater, esturaine and marine benthic macroinvertebrate sampling, ichthyoplankton surveys for identifying fish migration patterns, freshwater fish, and stream salamander surveys. She is a certified benthic macroinvertebrate taxonomist, with the Society of Freshwater Scientists and has experience identifying early lifestages of freshwater and estuarine fish. In addtion to her techincal experience, she is also experienced in project management, leading field crews, and has been a laboratory manager..

RELEVANT EXPERIENCE

Tappan Zee Constructors / New York State Thruway Authority, The New NY Bridge (Tappan Zee Hudson River Crossing), Westchester-Rockland County, NY. Senior Environmental Scientist. The New NY Bridge will replace the existing Tappan Zee Bridge crossing which handles more than 138,000 vehicles every day—far more than its design capacity. The new twin bridges are over 3 miles long and will cross the Hudson River at one of its widest points to connect Rockland and Westchester counties. Key features of the new bridge include twin iconic cable-stayed main spans with 1,200-foot center spans. Each bridge carries four general traffic lanes plus shoulders and extra-wide emergency lanes. The bridge will have new temporary tolling facilities with AETC (All Electronic Toll Collection) and a shared-use path (dedicated bicycle and pedestrian) on the northern bridge with scenic overlooks. The project implements Intelligent Traffic Systems (ITS) and Advance Traffic Management Systems (ATMS) to improve the flow of vehicle traffic. The bridge is designed for a 100-year service life and will be mass-transit-ready for bus rapid transit without strengthening, or for commuter or light rail on a separate structure constructed between the two highway bridges. The project team will follow strict environmental performance commitments to protect the Hudson River estuary.

The New York State Thruway Authority selected design-build as the delivery method for this project to meet an aggressive schedule. HDR is the lead designer, and a subcontractor for Tappan Zee Constructors LLC, a consortium of Fluor Enterprises, American Bridge Company, Granite Construction Northeast, and Traylor Bros. Detailed design includes deep foundations, cable-stayed main span and girder/sub-stringer approach span structures, pre-cast substructure and superstructure components and highway design including alignments, AETC tolling, ITS, utilities and facility design. HDR is also leading significant Environmental Compliance activities including underwater noise, water quality and airborne air/noise

monitoring.

Ms. Estler is a member of a field crew responsible for monitoring water quality conditions and fish survival, specifically Atlantic and shortnose sturgeon, to document potential impacts from the constuction of the Tappan Zee Bridge. She is also responsible for some Quality Control of field data.

(Construction Cost: $3.14 billion. Dates: 2013-2018)

Coney Island. Ms. Estler was responsible for collecting inter-tidal benthic macroinvertebrates from Coney Island, to document pre-construction and post-construction conditions at a proposed beach restoration site. She was also the primary taxonomist responsible for identifying collected organisms to speceis or the lowest practical level and analyzing the data comparing pre- and post-construction results.

Coastal Resources, Inc., Annapolis, MD. Environmental Scientist/Project Manager. Design and implement natural resource field studies including:

- Lead benthic macroinvertebrate, fish and ichthyoplankton sampling teams
- Principal benthic macroinvertebrate taxonomist and laboratory manager
- Coordinate and lead fish relocation efforts on multiple, simultaneously occurring stream restoration projects
- Create GIS mapping and perform analyses
- Rare, threatened and endangered species (RTE) species surveys
- Assist in RTE plant, herpetofauna, mussel, and odonate surveys
- Assist in wetland delineations

Prepare environmental reports for a variety projects and goals including:

- Describing baseline watershed/stream conditions and predicting impacts to surface waters and aquatic biota for proposed roadway, transit, and power projects for NEPA documents
- Assessing the condition of streams for county bio-surveys
- Evaluating effectiveness of stream restoration projects
- Analyze (multiyear and multiagency) water quality data for federal and state regulatory agencies and partnering firms
- Design specialized aquatic habitat evaluations to guide water resource engineers in remediating natural stream habitat

conditions for fish and benthic macroinvertebrates

Graduate Field and Laboratory Research, Antioch New England, NH.

- Designed and implemented Masters thesis project
- Collected marsh macroinvertebrates from the Mullica River, NJ
- Identified marsh macroinvertebrates at Montclair State University, NJ
- Performed associated analyses and wrote Masters thesis

New Jersey Marine Sciences Consortium, Atlantic Highlands, NJ.
Laboratory Technician

- Prepared juvenile weakfish for stable isotope and lipid analysis by dissecting, freeze drying, grinding, boating
- Maintained database of isotope analysis raw data

West River Watershed Alliance, Brattleboro, VT.
Coordinator of Volunteer Water Quality Sampling Program

- Coordinated volunteers on a pilot, water quality sampling project
- Handled and delivered water samples to the State laboratory
- Created a database for the summer's water quality results which was submitted to the State of Vermont and the EPA's STORET
- Coordinated press contacts for project
- Maintained water sampling equipment

Marc Hecht

Dredging and Pile Driving Monitoring

EDUCATION

Bachelor of Technology, Renewable Resources/ Environmental Studies, 2009

A.A.S, Renewable Resource/Environmental Studies, Morrisville State College; Morrisville, NY, 2006

REGISTRATIONS

N/A

CERTIFICATIONS

N/A

PROFESSIONAL MEMBERSHIP

N/A

Marc Hecht is a Field/Lab Scientist at HDR. He has been involved with projects that include environmental compliance and monitoring. Mr. Hecht has been responsible for monitoring construction activities for environmental complience, and preforming field sampling and lab analysis.

RELEVANT EXPERIENCE

Tappan Zee Constructors / New York State Thruway Authority, The New NY Bridge (Tappan Zee Hudson River Crossing), Westchester-Rockland County, NY. Field/Lab Scientist. The New NY Bridge will replace the existing Tappan Zee Bridge crossing which handles more than 138,000 vehicles every day—far more than its design capacity. The new twin bridges are over 3 miles long and will cross the Hudson River at one of its widest points to connect Rockland and Westchester counties. Key features of the new bridge include twin iconic cable-stayed main spans with 1,200-foot center spans. Each bridge carries four general traffic lanes plus shoulders and extra-wide emergency lanes. The bridge will have new temporary tolling facilities with AETC (All Electronic Toll Collection) and a shared-use path (dedicated bicycle and pedestrian) on the northern bridge with scenic overlooks. The project implements Intelligent Traffic Systems (ITS) and Advance Traffic Management Systems (ATMS) to improve the flow of vehicle traffic. The bridge is designed for a 100-year service life and will be mass-transit-ready for bus rapid transit without strengthening, or for commuter or light rail on a separate structure constructed between the two highway bridges. The project team will follow strict environmental performance commitments to protect the Hudson River estuary.

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Marc Hecht's role on the project is to monitor construction activities for environmental compliance.

(Construction Cost: $3.14 billion. Dates: 2013-2018)

Assistant Ornithologist, Wildlife Technician, Crew Supervisor. Conduct environmental monitoring. Water quality and TSS sampling. Collect sediment cores for SOD sampling. Monitor and control waterfowl populations in the NYC water shed. Conducted surveys of salmonid species on Alaska's Susitna River for proposed hydro electric plant, duties

included pit tagging, genetic sample collection, and fishing with a variety of gear types. Conduct wildlife surveys for Port Jersey Wind Turbine Feasibility Study. Conduct ichthyoplankton surveys for U.S. Army Corps of Engineers Harbor Deepening Project. Conduct Northern Cricket Frog call-back surveys and habitat assessment. Maintain equipment, including boats, airboats, and field gear. Supervise boat crews. Train new hires.

Volunteer, Endangered and Threatened Species Unit. Aided in surveys of endangered, threatened, and special concern species, including Northern Cricket Frogs, Bog Turtles, Timber Rattlesnakes, Red-Shouldered Hawks, Peregrine Falcons, and Bald Eagles. Field Technician. (2007) Conducted field studies and monitoring of Peregrine Falcons in NYC. Monitored active nests, signs of new activity, hunting habits and prey selection. Obtained and transferred injured raptors to and from rehabilitators, and released rehabilitated birds.

Pace University Environmental Center – Pleasantville, NY. Monitored condition and general care of captive birds of prey. Assisted in feeding, handling, and training raptors. Habitat construction. Trail maintenance. Gained hands-on experience in falconry and raptor handling. Assisted in educational programs with live animals.

Private Developer – Southeastern NY. Conducted surveys to identify and mark hazardous trees for removal. Aligned and planned hiking trails. Surveyed species such as rattlesnakes using habitats on a large exclusive residential development.

Stephen Niero

Water Quality Monitoring
Dredging and Pile Driving Monitoring

EDUCATION
B.S., Biology, SUNY Cortland, 2000

HDR TENURE
14 Years

INDUSTRY TENURE
14 Years

Stephen Niero is a Senior Scientist at HDR. He has been involved with projects that include water quality and fisheries surveys. Mr. Niero has been involved in underwater noise monitoring, video survey, and fish monitoring. He has performed water quality surveys involving long term multiparameter data sondes.

RELEVANT EXPERIENCE

Tappan Zee Constructors / New York State Thruway Authority, The New NY Bridge (Tappan Zee Hudson River Crossing), Westchester-Rockland County, NY. Field/Lab Scientist. The New NY Bridge will replace the existing Tappan Zee Bridge crossing which handles more than 138,000 vehicles every day—far more than its design capacity. The new twin bridges are over 3 miles long and will cross the Hudson River at one of its widest points to connect Rockland and Westchester counties. Key features of the new bridge include twin iconic cable-stayed main spans with 1,200-foot center spans. Each bridge carries four general traffic lanes plus shoulders and extra-wide emergency lanes. The bridge will have new temporary tolling facilities with AETC (All Electronic Toll Collection) and a shared-use path (dedicated bicycle and pedestrian) on the northern bridge with scenic overlooks. The project implements Intelligent Traffic Systems (ITS) and Advance Traffic Management Systems (ATMS) to improve the flow of vehicle traffic. The bridge is designed for a 100-year service life and will be mass-transit-ready for bus rapid transit without strengthening, or for commuter or light rail on a separate structure constructed between the two highway bridges. The project team will follow strict environmental performance commitments to protect the Hudson River estuary.

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Steve Niero's role on the project is involvement with water quality, fish and underwater noise monitoring in coordination with subconsultants.

(Construction Cost: $3.14 billion. Dates: 2013-2018)

APPENDIX C
REGULATORY CONTACT LIST

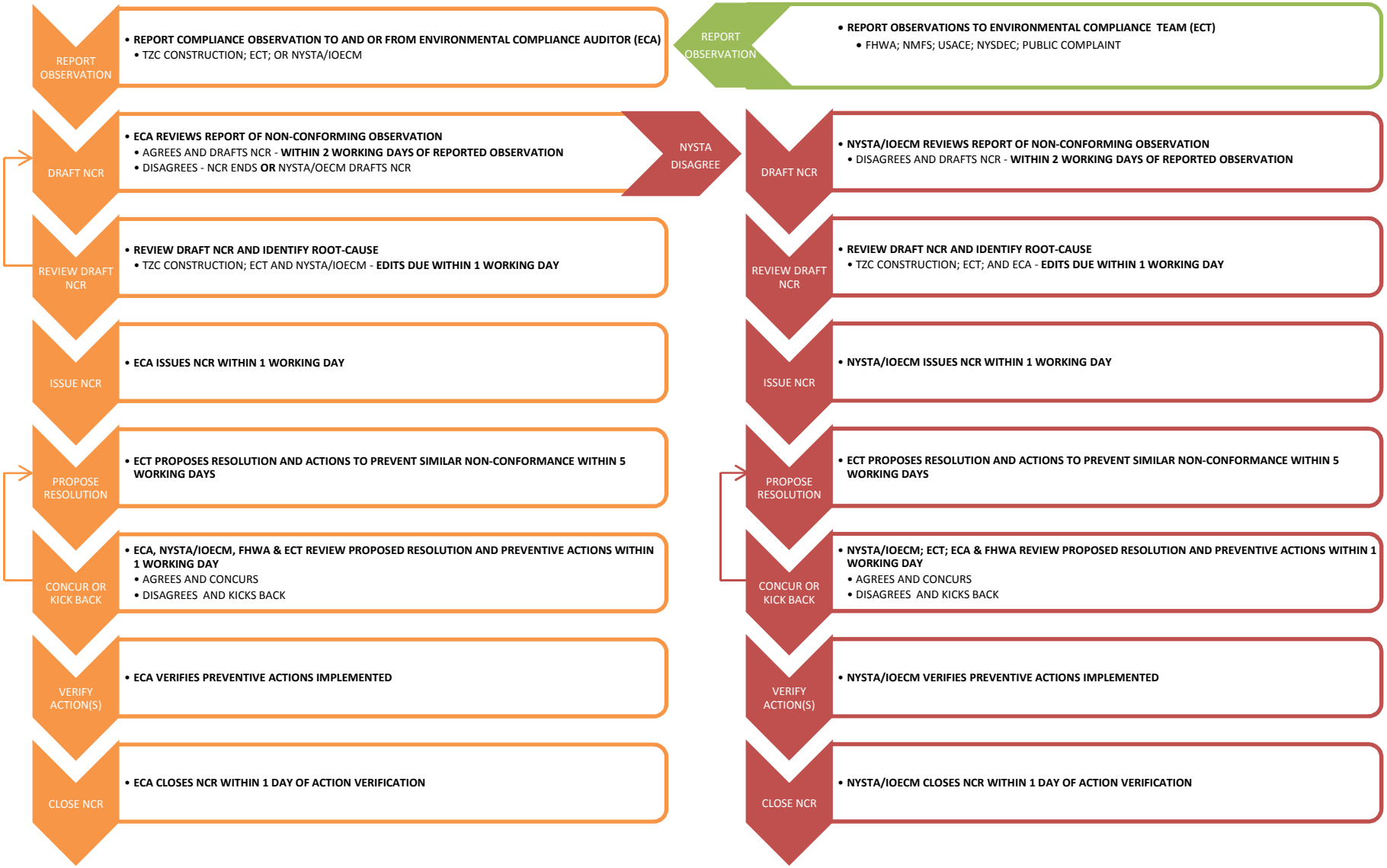
Regulatory Contact List

NYSTA or the OECM will be responsible for contacting and coordinating with appropriate regulatory agencies. The following is the current Project regulatory agency contact list for the Project:

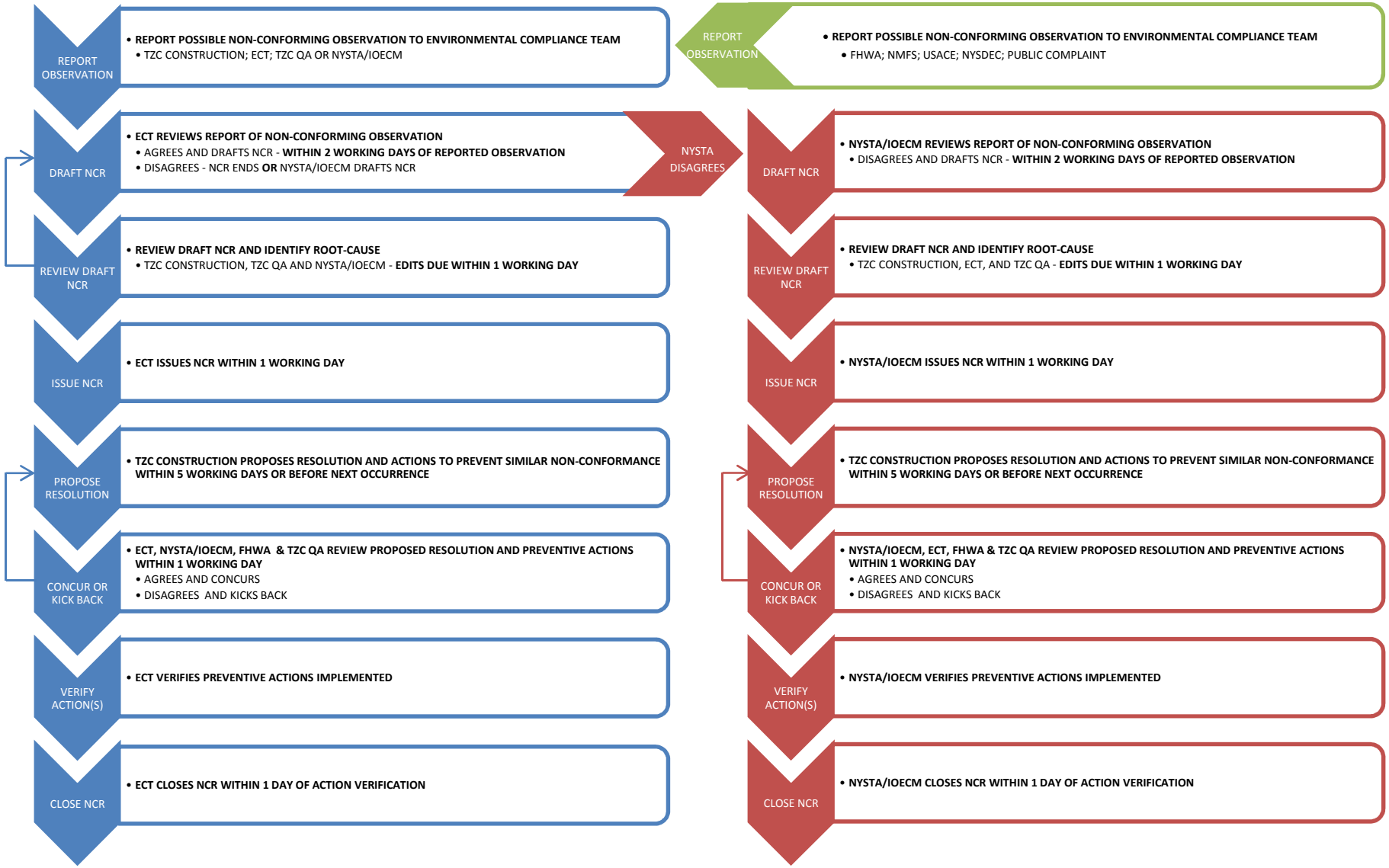
Agency	Contact Person	Phone	Address
USACE Section 10, 404 and 103 Permits; Nationwide Permits	Chris Mallery Rosita Miranda	917-790-8418 917-790-8420	26 Federal Plaza, Room 1937 New York, NY 10278
USACE Commercial Mooring Buoy Permits	Steve Ryba	917-790-8512	26 Federal Plaza, Room 1937 New York, NY 10278
USCG Notice to Mariners/Waterways Operations	Jeff Yunker	718-354-4195	212 Coast Guard Drive, Staten Island, NY 10305
USCG Bridge Permit	Chris Bisignano	212-668-7994	Battery Park Building One South Street New York NY 10004-1466
USCG In-water Spill Hotline		800-424--8802	
NYSPHO	John Bonafide	(518) 237-8643 ext. 3263	Peebles Island State Park P.O. Box 189 Waterford, NY 12188-0189
NYSDEC Albany Chief Permit Administrator	John Ferguson	(518) 402-9177	625 Broadway, 4th Floor Albany, NY 12233-1750
NYSDEC Region 3 Spill Response	Todd Ghiosay	(914) 428-2505 Ext. 361	100 Hillside Avenue, Suite 1W White Plains, NY 10603
NYSDEC Region 3 Regional Engineer	Thomas Rudolph, P.E.	(914) 428-2505 ext. 369	100 Hillside Avenue, Suite 1W White Plains, NY 10603
NYSDEC Region 3 Natural Resources Supervisor	Bill Rudge	(845) 256-3092	21 South Putt Corners Road New Paltz, NY 12561-1696
NYSDEC Region 3 Regional Water Engineer	Shohreh Karimipour, P.E.	(914) 428-2505 Ext. 350	100 Hillside Avenue, Suite 1W White Plains, NY 10603
NYS DEC Spill Hotline		(800) 457-7362 or (518)-457-7362	
EPA Region 2 Spill Hotline* (***SPCC Plan* has full list of spill response contacts)***		(212) 637-4040	

APPENDIX D
Environmental Non-Conformance Report Workflow

ENVIRONMENTAL NON-CONFORMANCE REPORT (NCR) WORKFLOW
COMPLIANCE MONITORING AND REPORTING AUDIT



ENVIRONMENTAL NON-CONFORMANCE REPORT (NCR) WORKFLOW
CONSTRUCTION OBSERVATION



APPENDIX E
ENVIRONMENTAL COMPLIANCE REVIEW SCHEDULE AND FORMS

Environmental Compliance Review Audit Schedules

Environmental Compliance Plans	**ECRA Schedule**
Environmental Compliance Plan	Bimonthly
SPCC	Quarterly
Contaminated Materials Management Plan	Quarterly
Construction Noise and Vibration Control Plan	Bimonthly
Air Quality Control Plan	Bimonthly
Dust Control Plan	Bimonthly
Construction Protection Plans for Historic Properties	Quarterly
Dredging and Pile Driving Monitoring Plan	Bimonthly
Underwater Noise Monitoring Plan	Bimonthly
Water Quality Monitoring Plan	Bimonthly
SWPPPs	Quarterly

ECRA Results Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Environmental Compliance Plan **4. Revision:** _____ **5. Issue Date:** _____

6. Audit Scope (include plans/deliverable/documentation/field events reviewed):

7a. Potential Non-comformance Issue Identified: Yes _____ No _____

7b. Describe non-conformance (if applicable):

8. Auditor Recommendations:

If 7a. above is "No" sign and date below (results form is complete), if 7a. is "Yes" please complete sections 11 through 20:

9. ECR Signature: _____ 10. Date: _____

Resolution Meeting

11. ECM/Tech Lead: _____ 12. Meeting Date: _____

13. Discussion Notes:

14. Proposed Resolution:

15. Final Disposition

ECM/Tech Lead Concurrs With Disposition 16. Signature: _____ 17. Date: _____

ECR Concurrs With Disposition 18. Signature: _____ 19. Date: _____

20. Non-Comformance Report Issued: Yes _____ No _____ NCR # _____

ECRA Checklist Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Environmental Compliance Plan **4. Revision:** _____ **5. Issue Date:** _____

		Yes	No	Comments
6.	Plan updated during this reporting period			
7.	(if updated) QC forms filed			

8. Documentation: Environmental Compliance Monitoring Report - Add Date **9. Revision:** _____ **10. Issue Date:** _____

		Yes	No	Comments
11.	Report prepared monthly			
12.	QC forms filed (APPR)			

Required Sections Included:		Yes	No	Comments
13.	NEPA Re-evaluations			
14.	Environmental compliance review			
15.	Environmental review of construction work plans			
16.	Environmental compliance training			
17	Current and future construction activities			
18.	Project permits and permit submittals			
19.	TZC-prepared environmental plans and ECT monitoring activities, including plan submittals and other environmental monitoring documentation			
20.	Environmental Compliance Training Log			
21.	Compliance with EPCs, environmental plans, and permits conditions, (Environmental Compliance Tracking Database)			
22.	Project incidents, exceedances and environmental NCRs (NCR Summary Report)			
23.	Spill incidents			
24.	Public complaints related to environmental compliance			

Documentation:		Yes	No	Comments
25.	Environmental Compliance Field Report uploaded to ELVIS (twice weekly)			

NCRs:		Yes	No	Comments
26.	NCR applicable to an Environmental Compliance Plan condition issued during this audit period			

27. Signature: _____ **28. Date:** _____

ECRA Checklist Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Spill Prevention Control and Countermeasure Plan **4. Revision:** _____ **5. Issue Date:** _____

		Yes	No	Comments
6.	Plan updated during this reporting period			
7.	Plan reviewed & certified by a NYS professional engineer (if applicable)			
8.	(if updated) QC forms filed			
9.	Record of Periodic Plan Review and Record of Revisions Completed			
10.	Plan Reviews at least once every five years			
11.	Primary and Secondary Emergency Coordinators are identified			
12.	Emergency Contact List Included as Tab 1			
13.	When a Spill Strikes Included as Tab 2			
14.	Spill Response Log Included as Tab 3			
15.	Oil Spill Report Form Included as Tab 4			
16.	SPCC Plan included as Tab 5			
17.	Determination Form included			
18.	Appendix B: Regulatory Cross Reference included			
19.	Appendix C: Inventory of Spill Control Equipment included			
20.	Appendix D: SPCC Inspection Form included			
21.	Appendix E: Spill Reporting Guide included			
22.	Appendix F: AST Integrity Testing Schedule included			

Documentation:		Yes	No	Comments
23.	Spill/Incident Log emailed to NYSTA & NYSDEC monthly			

NCRs:		Yes	No	Comments
24.	NCR applicable to an Environmental Compliance Plan condition issued during this audit period			

25. Signature: _____ **26. Date:** _____

ECRA Checklist Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Contaminated Materials Management Plan **4. Revision:** _____ **5. Issue Date:** _____

		Yes	No	Comments
6.	Plan updated during this reporting period			
7.	(if updated) QC forms filed			

Documentation:		Yes	No	Comments
8.	Manifest Tracking Log uploaded to ELVIS (monthly)			
9.	HMI Report submitted/uploaded to ELVIS (as needed)			

NCRs:		Yes	No	Comments
10.	NCR applicable to a Contaminated Materials Management Plan condition issued during this audit period			

11. Signature: _____ **12. Date:** _____

ECRA Checklist Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Construction Noise and Vibration Control Plan **4. Revision:** _____ **5. Issue Date:** _____

6. Plan: Air Quality Control Plan **7. Revision:** _____ **8. Issue Date:** _____

9. Plan: Dust Control Plan **10. Revision:** _____ **11. Issue Date:** _____

Field Inspections observed:		**Yes**	**No**	**Comments**
12.	Type and location of construction activities and equipment including DPFs, as applicable			
13.	Condition of equipment (e.g. no signs of damage, disrepair or visible emissions)			
14.	Minimized use of backup alarms on equipment (i.e. use of strobes, white-noise or self-adjusting backup alarms, as appropriate)			
15.	40-foot shrouds in use during in-water impact pile driving			
16.	Path control measures (e.g. movable barriers, directional controls, shrouds, etc.) in-use as required for specific equipment			
17.	Condition of the temporary noise walls			
18.	Equipment source noise levels (Lmax), with and without noise abatement control systems, as required			
19.	Construction noise and vibration monitoring stations			
20.	Compliance Labels affixed (as applicable)			

Equipment Source Noise Monitoring performed:		**Yes**	**No**	**Comments**
21.	In the absence of non-construction related significant noise sources, if feasible. If this is not feasible, a 30-second to 2-minute background noise measurement including the non-construction related significant noise sources will be obtained. This background noise measurement will be logarithmically subtracted from the noise measurement obtained with the equipment in operation			
22.	With the equipment at typical operating capacity			
23.	At a distance of 50 feet, or closer, if required, to isolate the equipment noise level			
24.	If required, at the nearest noise-sensitive receptor at the shoreline for equipment to be used in-water			
25.	In the absence of precipitation and wind speed greater than 12 miles per hour			

Environmental Monitoring Stations:		**Yes**	**No**	**Comments**
26.	Stations Inspected			
27.	Stations Calibrated/Zeroed Out			

28. Signature: _____ **29. Date:** _____

ECRA Checklist Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Construction Noise and Vibration Control Plan **4. Revision:** _____ **5. Issue Date:** _____

		Yes	No	Comments
6.	Plan updated during this reporting period			
7.	(if updated) QC forms filed			

8. Plan: Air Quality Control Plan **9. Revision:** _____ **10. Issue Date:** _____

		Yes	No	Comments
11.	Plan updated during this reporting period			
12.	(if updated) QC forms filed			

13. Plan: Dust Control Plan **14. Revision:** _____ **15. Issue Date:** _____

		Yes	No	Comments
16.	Plan updated during this reporting period			
17.	(if updated) QC forms filed			

18. Documentation: Weekly Equipment Memo and Log

		Yes	No	Comments
19.	Memo and Log prepared Weekly			

Weekly periods Reviewed

20. Date: _____

21. Date: _____

22. Date: _____

23. Date: _____

ECRA Checklist Form				
Required Information Included:		**Yes**	**No**	**Comments** (if "no" specifiy reporting period)
24.	QC forms filed (APPR)			
25.	Make/model of equipment			
26.	Make/model and age of equipment engine			
27.	Unique identifier, such as registration number, and/or Equipment/Equipment Engine serial number			
28.	Horsepower Rating of each piece of Equipment			
29.	Power Source/ Fuel Type (e.g. diesel, electric, both)			
30.	Location Where Equipment Will be Used (On-Land, In-Water, Both)			
31.	Estimated date of first use on the Project Site			
32.	Estimated date of last use on the Project Site, as applicable			
33.	USEPA Tier Emissions Standard			
34.	Engine Family (for off-road vehicles)			
35.	Make/ Model of DPF and USEPA, CARB or VERT verification, as applicable			
36.	Equipment noise level			
Documentation:		**Yes**	**No**	**Comments**
37.	Daily Calibration Checklists uploaded to ELVIS			
38.	Daily Calibration Checklist contains QC stamp			
39.	Field Inspection Form uploaded to ELVIS			
40.	Field Inspection Form contains QC stamp			
41.	Annotated Data uploaded Monthly to ELVIS			
42.	Annotated data QC Form filed (APPR)			
43.	Noise Exceedance Memo submitted (if exceedance occurred)			
44.	Noise Exceedance Memo QC Form filed (APPR)			
NCRs:		**Yes**	**No**	**Comments**
45.	NCR applicable to a Construction Noise and Vibration Control Plan condition issued during this audit period			
46.	NCR applicable to an Air Quality Control Plan condition issued during this audit period			
47.	NCR applicable to a Dust Control Plan condition issued during this audit period			

48. Signature: _____ **49. Date:** _____

ECRA Checklist Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Cultural Protection Plan for Historic Properties **4. Revision:** _____ **5. Issue Date:** _____

		Yes	No	Comments
6.	Plan updated during this reporting period			
7.	(if updated) QC forms filed			

Documentation:		Yes	No	Comments
8.	Resource-Specific Construction Protection Plan prepared during this reporting period			
9.	QC forms filed (APPR)			

If Prepared Plan includes:		Yes	No	Comments
10.	Measures to protect historic properties from vibration, excavation, and damage from heavy equipment, addressing both direct and indirect effects, including effects from re-routed traffic			
11.	Measures to provide the safe and efficient movement of traffic around work zones, including access for emergency services (fire, medical, police)			
12.	Measures to provide the maintenance of basic services (water, gas, electric)			
13.	Measures to control and/or manage fugitive dust, erosion, noise lighting and visual effects of construction activities to the extent practicable.			

NCRs:		Yes	No	Comments
14.	NCR applicable to a Construction Protection Plan for Historic Properties Plan condition issued during this audit period			

15. Signature: _____ **16. Date:** _____

ECRA Checklist Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Dredging and Pile Driving Monitoring Plan **4. Revision:** _____ **5. Issue Date:** _____

		Yes	No	Comments
6.	Plan updated during this reporting period			
7.	(if updated) QC forms filed			

8. Documentation: Pile Driving Monitoring Report (Sturgeon Monitoring During Pile Driving 60 Day Report) - Add Date **9. Revision:** _____ **10. Issue Date:** _____

		Yes	No	Comments
11.	Report prepared every 60 days			
12.	QC forms filed (APPR)			

Information Included:		Yes	No	Comments
13.	Summary of pile driving such as, start and end times, quanitity of piles driven, and locations			
14.	Summary of barge-based and vessel-based monitoring durations			
15.	Example map showing monitoring vessel transects during reporting period			
16.	Quantity of fish (sturgeon and/or non-sturgeon species) observed			
17.	Locations of fish observed (if known)			
18.	Condition of fish observed (if known)			
19.	Copies of required data sheets and photodocumentation associated with collection of a sturgeon (if collected)			

20. Documentation: Dredge Monitoring Report - Add Date **21. Revision:** _____ **22. Issue Date:** _____

		Yes	No	Comments
23.	Report prepared at the end of each dredging operation (i.e., each three-month dredging period)			

Information Included:		Yes	No	Comments
24.	Dates of dredging			
25.	Volume of material removed			
26.	Number of trips to the disposal site			
27.	Observations of sturgeon during dredging			

ECRA Checklist Form				
Documentation:		**Yes**	**No**	**Comments**
28.	Daily Vessel-Based Monitoring Data Form uploaded to ELVIS			
29.	Daily Vessel-Based Monitoring Data Form contains QC stamp			
30.	If sturgeon is observed: Incident Report-Sturgeon Take, Sturgeon Data Collection Form, and Sturgeon Specimen Log Forms completed as required with QC Stamp			
NCRs:		**Yes**	**No**	**Comments**
31.	NCR applicable to a Dredging and Pile Driving Monitoring Plan condition issued during this audit period			

32. Signature: _____ **33. Date:** _____

ECRA Checklist Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Dredging and Pile Driving Monitoring Plan **4. Revision:** _____ **5. Issue Date:** _____

Pile Driving - Barge Based Observer:		**Yes**	**No**	**Comments**
6.	Record actual time of pile driving (including the beginning and end times and pile size) for impact hammering			
7.	Search for stunned, injured, or dead sturgeon and non-sturgeon species continuously during active pile driving (using binoculars to the extent possible)			
8.	Barge observer searched for stunned, injured or dead sturgeon during the active pile driving period			
9.	Will maintain radio communication with the observers conducting the vessel-based monitoring			
10.	Impact Pile driving occurs from 7AM to 7PM only. If pile driving for later than 7 PM is required in order to complete a pile begun that day, EPOC for construction should notify the OECM for approval prior to pile driving after 7 PM			
11.	Record location of the pile driving			
12.	A noise attenuation system is deployed and operating to specifications during impact pile driving			
13.	Soft-start (pile tapping or series of minimal energy strikes) is used at the start of impact pile installation to encourage fish to move from the immediate area of the pile driving activity			
14.	That pile driving does not result in an increase in turbidity that results in a substantial visible contrast to the Hudson River outside the pile driving or cofferdam			

Pile Driving - Vessel Based Observer:		**Yes**	**No**	**Comments**
15.	Daily Vessel-Based Monitoring Data Form completed			
16.	If sturgeon is observed: Incident Report-Sturgeon Take, Sturgeon Data Collection Form, and Sturgeon Specimen Log Forms completed as required			
17.	Vessels equipped with a Global Positioning System (GPS), VHF radios, and depth sounders			
18.	Search transects within 1 mile downcurrent of pile driving activity during and up to one hour after pile driving has been completed, conditions permitting			
19.	Run a pattern around pile driving activities that will allow visual observation of the construction zone and down-current of the construction zone, including shoreline areas as appropriate depending on the water depth at the time of inspection			
20.	Scan the water with binoculars, as practicable			
21.	Will remain in radio contact with the monitors on the pile driving barges			
22.	Record observations of piscivorous bird activity such as potential fish predation/scavenging			

23. Signature: _____ **24. Date:** _____

ECRA Checklist Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Underwater Noise Monitoring Plan **4. Revision:** _____ **5. Issue Date:** _____

		Yes	No	Comments
6.	Plan updated during this reporting period			
7.	(if updated) QC forms filed			

8. Documentation: Description of Underwater Noise Attenuation System Design Unit # **9. Revision:** _____ **10. Issue Date:** _____

		Yes	No	Comments
11.	QC forms filed (APPR)			

Required Sections Included:		Yes	No	Comments
12.	The duration (i.e., minutes/hours) of time it takes to install each pile and the duration of time the area			
13.	Peak SPL and cSEL measured for each pile at each hydrophone			
14.	The distance at which the peak sound level was equal to 206 dB re 1 µPa (peak SPL) for each pile			
15.	The distance at which the cumulative sound energy was equal to 187 dB re 1 $\mu Pa^2 \cdot s$ (cSEL) for each			
16.	The distance at which sound level was equal to 150 dB re 1 µPa rms SPL for each pile			
17.	Peak SPL, rms SPL and the cSEL associated with vibratory pile-driving (if monitored)			
18.	Confirmation that peak noise levels did not exceed the 206 dB re µPa peak SPL threshold for longer than anticipated or over a greater geographic area than anticipated			

ECRA Checklist Form

19. Documentation: Production Pile Driving Reports (Underwater Noise Monitoring Reports) - Add Date & Pile # **20. Revision:** _____ **21. Issue Date:** _____

		Yes	No	Comments
22.	Report prepared for each pile monitored			
23.	QC forms filed (APPR)			

Required Sections Included:		Yes	No	Comments
24.	The duration (i.e., minutes/hours) of time it takes to install each monitored pile and the duration of time the area is ensonified during each pile			
25.	Mean and maximum Peak SPL, mean SELss, and mean and maximum rms SPL, measured at each hydrophone for each pile			
26.	cSEL calculated at each hydrophone based on the measured mean SELss			
27.	The diameter at which the peak sound level was equal to 206 dB re 1 µPa peak SPL for each pile based on the mean peak SPL			
28.	The diameter at which the cumulative sound energy was equal to 187 dB re 1 μPa^2•s cSEL based on the mean SEL for each pile			
29.	The diameter at which sound level was equal to 150 dB re 1 µPa rms SPL based on the mean rms SPL for each pile			
30.	Mean and maximum Peak SPL and rms SPL associated with vibratory pile-driving, if monitored			
31.	Mean and maximum Peak SPL, mean SELss, and cSEL associated with rock socket drilling, if monitored			
32.	Confirmation that peak noise levels did not exceed the 206 dB re µPa peak SPL threshold over a greater geographic area than anticipated.			
33.	Confirmation that the estimated acoustic corridor where sound was less that 187 dB re 1μPa^2•s cSEL was maintained for at least 5,000 feet.			
34.	Confirmation that the estimated acoustic corridor where sound was less that 150 dB re 1µPa rms SPL was maintained for at least 5,000 feet			

35. Documentation: Monthly Summary of Pile Driving Activities* - Add Date & Pile # **36. Revision:** _____ **37. Issue Date:** _____

*** previously submitted as the Underwater Acoustic Monitoring Report / Monthly Underwater Noise Monitoring Report / Monthly Pile Driving – Underwater Noise Summary Report**

		Yes	No	Comments
38.	Report prepared monthly			
39.	QC forms filed (APPR)			

Required Sections Included:		Yes	No	Comments
40.	The duration (i.e., minutes/hours) of time it takes to install each pile and the duration of time the area			
41.	Peak SPL and cSEL from underwater sound measured for each pile at each hydrophone			
42.	The distance at which peak SPL was equal to 206 dB re 1 µPa for each pile			
43.	The distance at which cSEL was equal to 187 dB re 1 µPa2-s for each pile			
44.	The distance at which rms SPL was equal to 150 dB re 1 µPa rms SPL for each pile			
45.	Peak SPL, rms SPL and the cSEL associated with vibratory pile-driving (if monitored)			
46.	Confirmation that peak noise levels did not exceed the 206 dB re µPa peak SPL threshold for longer than anticipated or over a			

47. Documentation: Weekly Impact Pile Driving Plan* - Add Date & Pile # **48. Revision:** _____ **49. Issue Date:** _____

		Yes	No	Comments
50.	Report prepared Weekly			
51.	QC forms filed (APPR)			

Required Sections Included:		Yes	No	Comments
52.	A depiction of each pier (i.e. eastbound or westbound) where impact pile driving is anticipated			
53.	An estimate of the day of the week that each pile within the pier will be driven			
54.	The estimated extent of the 187 dB re 1 $\mu Pa^2 \bullet s$ cSEL for piles driven at a given pier based on Table 1 (note: only one isopleth is provided per pier)			
55.	The estimated extent of the 150 dB re 1 µPa rms SPL for piles driven at a given pier based on Table 2 (note: only one isopleth is provided per pier)			

ECRA Checklist Form

56. Documentation: Weekly Pile Driving Summary Report* - Add Date & Pile # **57. Revision:** _____ **58. Issue Date:** _____

		Yes	No	Comments
59.	Report prepared Weekly			
60.	QC forms filed (APPR)			

Required Sections Included:		Yes	No	Comments
61.	Quantity of piles driven to completion in the reporting period			
62.	Quantity of piles monitored for underwater noise during the reporting period			
63.	Confirmation that the estimated acoustic corridor where sound was less that 187 dB re 1µPa^2•s cSEL was maintained for at least 5,000 feet.			
64.	Confirmation that the estimated acoustic corridor where sound was less that 150 dB re 1µPa rms SPL was maintained for at least 5,000 feet			
65.	Pier-pile numbers			
66.	Dates of vibratory and impact pile driving			
67.	Diameter of piles driven			
68.	Hammer model used for vibratory or impact pile driving			
69.	Net driving time for vibratory or impact pile driving			
70.	Number of sturgeon observed during fish monitoring for pile driving			
71.	Confirmation that the Noise Attenuation System (NAS) was utilized			
72.	Confirmation that a containment boom was deployed			
73.	Indication that if pile was monitored for underwater noise			
74.	Confirmation that water quality monitoring was performed per the Water Quality Monitoring Plan			
75.	Confirmation that barge-based sturgeon monitoring was performed per the Dredging and Pile Driving Monitoring Plan			
76.	Confirmation that vessel-based sturgeon monitoring was performed per the Dredging and Pile Driving Monitoring Plan			

NCRs:		Yes	No	Comments
77.	NCR applicable to a Underwater Noise Monitoring Plan condition issued during this audit period			

78. Signature: _____ **79. Date:** _____

ECRA Checklist Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Water Quality Monitoring Plan **4. Revision:** _____ **5. Issue Date:** _____

		Yes	No	Comments
6.	Plan updated during this reporting period			
7.	(if updated) QC forms filed			

8. Documentation: Annual Dredging Monitoring Report (Water Quality Monitoring Report Add Date - Dredging and Decanting) **9. Revision:** _____ **10. Issue Date:** _____

		Yes	No	Comments
11.	Report prepared within 15 days of completion of the dredging operation			
12.	QC forms filed (APPR)			

13. Documentation: Annual Water Quality Monitoring Report Add Date **14. Revision:** _____ **15. Issue Date:** _____

		Yes	No	Comments
16.	Report prepared 30 day following the New Year			
17.	QC forms filed (APPR)			

Documentation:		Yes	No	Comments
18.	Visual Inspection Form uploaded to ELVIS			
19.	Visual Inspection Form contains QC initial			
20.	Water Quality Monitoring Data Sheet uploaded to ELVIS (if samples are collected)			
21.	Chain-of-custody uploaded to ELVIS (if samples collected)			
22.	Lab Results uploaded to ELVIS (if samples collected)			

NCRs:		Yes	No	Comments
23.	NCR applicable to a Water Quality Monitoring Plan condition issued during this audit period			

24. Signature: _____ **25. Date:** _____

ECRA Checklist Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Water Quality Monitoring Plan **4. Revision:** _____ **5. Issue Date:** _____

Visual Observer:		**Yes**	**No**	**Comments**
6.	Observations of activities conducted by a barge-based or vessel-based observer during the activities identified in Table 1			
7.	Observations documented on one or more field forms			

Vessel Based Whole Water Sample:		**Yes**	**No**	**Comments**
8.	Water quality monitoring conducted for activities as specified in Table 1.			
9.	TSS and contaminant whole water samples collected during either the flood or ebb tide stage during daylight hours.			
10.	Water quality monitoring via whole water sample collection conducted daily for each activity			
11.	In-plume surveys collected at the edge of the 500-ft mixing zone, or at the nearest practicable proximity to a silt curtain			
12.	Acoustic Doppler Current Profiler (ADCP) used to identify the plume			
13.	Optical Backscatter Sensor (OBS) configured to record turbidity (NTU), depth (meters), temperature (°C) and salinity (ppt) is mounted to a submersible pump and used to collect vertical profiles at water sample station locations			
14.	Pump used to collect discrete whole water samples at separate depths for TSS and contaminants. - Water depth < 10 feet = mid-depth samples - Water depth between 10 and 20 feet = near-surface and near-bottom samples - Water depth > 20 feet = near-surface, mid-depth, and near-bottom samples			
15.	Samples preserved at 4° C and sent under full Chain-of-Custody protocols			
16.	Ambient surveys conducted along a transect a minimum of 500-ft up current of the source to provide data for comparison with the in plume surveys. Samples collected in the same manner as the in-plume surveys.			
17.	Samples analyzed for dissolved nickel, copper, lead and zinc filtered in the field			

18. Signature: _____ **19. Date:** _____

ECRA Checklist Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Storm Water Polution Prevention Plan (add location to be audited) **4. Revision:** _____ **5. Issue Date:** _____

		Yes	No	Comments
6.	Plan updated during this reporting period			
7.	(if updated) QC forms filed			

8. Documentation: Concrete Batch Plant Annual SWPPP Report - Add Date **9. Revision:** _____ **10. Issue Date:** _____

		Yes	No	Comments
11.	Report prepared annually			
12.	QC forms filed (APPR)			

Documentation:		Yes	No	Comments
13.	Weekly SWPPP Report ELVIS (Bi-weekly for Concrete Batch Plant) - Uploads Monthly			

NCRs:		Yes	No	Comments
14.	NCR applicable to an Storm Water Pollution Prevention Plan issued during this audit period			

15. Signature: _____ **16. Date:** _____

ECRA Checklist Form

1. ECR: _____ **2. Audit Date:** _____

3. Plan: Storm Water Polution Prevention Plan (Add location being audited) **4. Revision:** _____ **5. Issue Date:** _____

Field Inspection:		**Yes**	**No**	**Comments**
6.	Inspection Checklist Completed			
7.	Photodocumented areas of concern			
Visual Observations (General) Included:		**Yes**	**No**	**Comments**
8.	NOI posted at the construction site for public viewing			
9.	Copy of the SWPPP retained at the construction site			
10.	copy of the SPDES General Permit retained at the construction site			
11.	Rain event log kept on site up to date			
12.	Drum Labels			
13.	Areas of concern from last inspection			
Visual Observations (Westchester/Rockland) Included:		**Yes**	**No**	**Comments**
14.	Soil disturbances or removal of vegetation			
15.	Proper Protection for disturbed soils			
16.	Silt fences			
17.	Stockpiles			
18.	Use of wetting agents			
19.	Soil tracking/trackoff pads			
20.	Permanent stabilization areas			
21.	Washout/errosion areas			
22.	Inlet Protection			
Visual Observations (Concrete Batch Plant) Included:		**Yes**	**No**	**Comments**
23.	Location of Spill Kit and SPCC Plan			
24.	Condition of hoses			
25.	Discharges or leaks from curbed areas			
26.	Discharges			
27.	Increased turbidity or a visible contrast around the barges			
28.	Dust control system			
29.	Available storage in the wastewater sumps			
30.	Available storage in the waste bins			
31.	Housekeeping methods			

32. Signature: _____ **33. Date:** _____