NFWF Long Island Sound Futures Fund Grant Program

Quality Assurance Project Plan Webinar

December 2021



Webinar Instructions

- All participants muted.
- Do not hit hold button.
- Raise "hand" on webinar guidance screen NOW to confirm you can hear us ©

QUESTIONS? Questions will be collected & answered at the end of sections during the webinar.

- Type question into "Enter a question for staff" and click "Send" or
- Send question to <u>Erin.Lewis@nfwf.org</u>
 after webinar.

PROBLEMS?

 Type it into the "Enter a question for staff." We will try to resolve it during the webinar.



<u>Webinar Agenda</u>

- Who? Introductions
- What? QAPP Requirement and Definition
- Why? Purpose of QAPP
- How? QAPP Development Step-by Step
- When? Timeline and Coordination with Cardno/NFWF
- Where? Submission Process to NFWF/EPA
- Finish Line Tips to getting your QAPP completed quickly
- Questions?







Who? Presenters - NFWF

Lynn Dwyer

- Program Director, Northeast
- Lynn.Dwyer@nfwf.org

Erin Lewis

- Coordinator, Northeast Regional Programs
- Erin .Lewis@nfwf.org





<u>Who? Presenters - Cardno</u>

Jennifer Wallace, Cardno, Inc.

- Senior Environmental Project Scientist/Project Manager
- Providing QAPP Technical Assistance to NFWF grantees since 2011
- Jennifer.Wallace@cardno.com

Cheryl Hennessy, Cardno, Inc.

- Senior Environmental Project Scientist/Project Manager
- Providing QAPP Technical Assistance to NFWF grantees since 2015
- <u>Cheryl.Hennessy@cardno.com</u>



<u>Who?</u> <u>Cardno</u> Team



Adam Bonin

Allison McKenzie

Amanda Koonjebeharry

Kathryn Longwill

Maggie Mason

Stephanie Healey



Who? Cardno Team Experience





What? LISFF QAPP Requirement

Grantees whose projects will collect, analyze, or use primary and/or secondary environmental data for the purpose of making decisions, assessment, management or policy recommendations, or drawing conclusions are required to submit a Quality Assurance Project Plan (QAPP) for review by NFWF and approval by EPA.





What? QAPP Definition

Required by EPA because adequate QA/QC ensures transparency, consistency, comparability, completeness, and <u>confidence</u> in project recommendations and conclusions.

The QAPP documents a project's technical planning process, providing a clear, concise, and complete plan for the data collection activities.

The QAPP is a stand-alone document that certifies data included in project recommendations and conclusions is usable.





<u>What? Environmental Data</u>



Environmental data triggering the requirement to prepare a QAPP includes:

- Primary data
- information collected directly from measurements, surveys, assessments, interviews, or observations

Secondary/Existing data

- data that were collected for other purposes or obtained from other sources
- includes literature reviews, stakeholder surveys, models, database queries, and geospatial analysis



Questions?



<u>How?</u> <u>QAPP Template</u> <u>Overview</u>

- Multiple QAPP Templates are available to assist LISFF Grantees*
 - Lab Fieldwork
 - Non-Lab Fieldwork, Sampling
 - Non-Lab Fieldwork, Assessment
 - Public Meetings/Surveys
 - Secondary Data, Modeling
 - Hybrids Address Fieldwork and Non-fieldwork data collection

*Templates in word are at: nfwf.org/programs/long-island-soundfutures-fund/quality-assuranceproject-plan-development-guidance



NFWF QAPP PROJECT No.: Project Name: Date: Revision No.:

Insert Project Name, NFWF ID No., Grant Type. Complete Information in Document Header]

QUALITY ASSURANCE PROJECT PLAN

COMPLETED PLAN PREPARED BY:

[Insert name here]

[Date]

Refer correspondence to: [Name, organization, address, telephone, and email]

(Note to All Grantees: Instructions in this QAPP Template are given in bold, highlighted type. Make sure to complete or revise all sections and remove any underlining. Also, ERASE the instructions, including this one, as you complete the QAPP for your specific project. Make sure to define acronyms/abbreviations when they initially appear in the text (i.e. mg/L, NTU, etc.). Make changes in other places as necessary. If a section is not applicable to your project, delete the template text and replace with "N/A".) How? QAPP Template Overview





1 PROJECT MANAGEMENT

1.1 CONTACT INFORMATION

[Please provide the name and phone number of project personnel. Include an Organization Chart if your project team is comprised of multiple project partners and/or more than five (5) team members.]

All personnel listed below will receive copies of this Quality Assurance Project Plan (QAPP), and any approved revisions of this plan. Once approved, this QAPP will be available to any interested party by requesting a copy from the project management.

Table 1: Project Team Contact Information

<u>Title</u>	Name (Affiliation)	Phone Number/E-mail
Project Manager		
Primary Field Sampler		
Laboratory Manager		
Laboratory Quality Assurance/Quality Control (QA/QC) Officer		
Environmental Scientist		
National Fish and Wildlife Foundation (NFWF) Program Manager	Stephanie Heidbreder, NFWF	(202) 595-2498 stephanie.heidbreder@nfwf.org
QA Officer [If this title does not apply to anyone on the Project Team then add " / QA Officer" after the Project Manager Title and delete this [ine]		

LABORATORY INFORMATION

[Please provide the name, contact information and documentation of state certification for the laboratory employed to conduct sample analysis. Add information for all labs included on the project, even if they do not have a state or DHS certification.]

Name		
Address		
Phone	Contact Name	
DHS Laboratory Certification No.	Expiration Date	

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<u>How?</u> <u>Template</u> <u>Overview</u>







1.2 Project Objectives and Approach – from proposal

- Clearly state the objectives
 - Example Increase collaboration and expand restoration efforts in the watershed
- What methods/surveys/ data collection activities will achieve this outcome?
 - Example Landowner research, situation assessment, stakeholder interviews, watershed meetings
- What is the geographic scope of the project? Watershed, region, city, specific sites?
- Provide background to support the project objectives and site selection
 - Example Recent Management Plan recommended assessing stakeholder buy-in to help build awareness about importance of land protection and stewardship in the watershed. Need to learn why landowners are not willing to increase stewardship activities land through government-assisted programs.



1.2 Project Objectives and Approach (from proposal)

- Should the project comply with agency legislation, permits, comprehensive management plans, or organizational goals?
 - Example MS4 permit, County Stormwater ordinance, City Green Infrastructure Goals, USFWS Recovery Plan
- Explain the Project team Will volunteers, students, or other individuals that require training be involved in data collection?
 - Volunteers will collect species presence data. Must attend USFWS training in the spring
- What are the envisioned outcome and final deliverables?
 - Example The work will produce a Watershed Plan that describes how our members will work together to serve the region. It will address natural resource challenges and offer strategies to increase land protection and land stewardship & other elements important to the membership) while supporting a sustainable rural economy





1.3 Data Quality Objectives

Establish criteria for data quality/usability

- What are the procedures/limits/training/guidelines in place during data collection to ensure data can be used to meet project objectives?
- How will you know data was collected accurately and is valid? More specifics than in section 1.2.
- Ensure that the type, quantity, and quality of environmental data used in decision-making will be appropriate
 - Does data need to meet compliance objectives, such as management plan or permit requirements? How?
 - Who decided the approach for data collection/quality was appropriate? Based on what information? Previous experience? Professional qualifications?
- Explain site selection criteria and why the sites selected for sampling are appropriate to achieve the project objectives
 - How are sampling locations selected? When and by whom?

<u>How?</u> <u>Template</u> <u>Overview</u>





Data Quality Objective Examples

- Team experience and adherence to protocols.
 - Our Data Quality Objectives are based on federal protocols established by the EPA, NRCS and USGS. Specifically, all fisheries sampling will follow EPA protocols, habitat assessments will follow NRCS visual assessment protocols, and temperature monitoring will follow USGS protocols as specified in the following sections.

Identifying/aligning to past project success

- We have successfully used this set of parameters to monitor the success of projects dating back to 2005 when we first began work in the state.
- Compliance with regulatory requirements or a management plan
 - Recommendations from stakeholders collected during workshops should be in alignment with state and town guidelines in order to even be considered for the management plan



Data Quality Objective Examples

Project experience in a similar geographic scope or representative area

- Decisions regarding the applicable management practices, are made by the professional conservation practitioners listed in the Project Team and based on the presence/absence of species through the knowledge of local staff, annual monitoring efforts, and long-term datasets.
- Sites were selected because they support nesting priority shorebirds, are beaches where
 people recreate and provide opportunities for outreach to reduce human threats to
 nesting shorebirds.
- Identification of and adherence to accepted methods and appropriate training
 - USC staff and member districts have been trained on the Stream Corridor Assessment: A Process Guide, as well as have trained others. The field samplers have participated in stream corridor assessment guide training and were involved in the development of the guide. Field samplers and district partner staff will attend ongoing trainings regarding stream corridor restoration and grazing systems to be able to identify potential projects meeting criteria within the USC Water Quality Program



1.4 Quality Assurance Objectives (QAOs)

- Specifically outline the range or rules for accepting data for use on your project. When reviewing a datasheet, how will you know if the data collected is wrong or cannot be used on the project?
 - If the model values fall between 0.75 and 0.99, the model will be validated.
 - Comments from stakeholders must be relevant to the project geographic scope
 - GIS layers from 2006-present only are relevant
- QAOs are more specific than DQOs
 - Based on historical data and professional experience the ammonia concentration in the location of the new analyzers could theoretically range from 0.0 mg/L (full nitrification) to approximately 24 mg/L (no nitrification)





1.4 Quality Assurance Objectives

Table 2 Quality Assurance Objectives for Individual Measurements

Parameter	Method	Precision	Accuracy	Phone App
Latitude/	Mobile App	Both latitude and longitude are	+/- 4 m	Google Maps
Longitude		rounded to 6 decimal places,		-
-		providing a precision up to 11.1 cm		

Table 2 Quality Assurance Objectives for Individual Measurements

Parameter	Method	Possible Range (mg/L)	Target Average Daily Concentration (mg/L)
Ammonia	Analyzer	0.0 - ~24.0*	0.0 – TBD
Nitrate	Probe	0.0 - ~24.0**	0.0 - 4.0
Total Suspended Solids	Probe	2,000 - 4,000	2,800 - 3,200



1.4 Quality Assurance Objectives

Table 2 Quality Assurance Objectives for Individual Measurements

Parameter	Species	Method	Accuracy
Number of individuals	Piping Plover, Least Tern, and American Oystercatcher	Observations are made and recorded on the 2021 Audubon Daily Visit form, the 2021 Piping Plover Productivity Survey Site Summary Form, and the BGE Data Summary 2021 excel file	Visit sites at least twice a week according to USFWS protocol to confirm number of individuals at site; partners are trained in the USFWS/NYS DEC protocols
Number of pairs	Piping Plover and American Oystercatcher	Observations are made and recorded on the 2021 Audubon Daily Visit form and the BGE Data Summary 2021 excel file; plover pairs are recorded in the 2021 Piping Plover Productivity Survey Site Summary Form as well; secondary data collected from partners are recorded in NFWF LISFF Be a Good Egg Data Summary 2021 excel file	Visit sites at least twice a week according to USFWS protocol to confirm number of individuals at site; partners are trained in the USFWS/NYS DEC protocols
Nest fate	Piping Plover and American Oystercatcher	Observations are made and documented on the 2021 Audubon Daily Visit form	Weekly check nests during beginning of nesting seasons according to USFWS protocol; partners are trained in the USFWS/NYS DEC protocols



<u>How?</u> Template Overview



2.0 Data and Sample Acquisition

- What are you collecting?
- How are you collecting samples or data?
- What preparation or follow-up is involved for fieldwork?
- Who is collecting the data and what training have they received?
- What are the requirements for field instrument calibration and maintenance?



<u>How? Template</u> <u>Overview</u>

2.0 Data and Sample Acquisition

- How and when are samples transported from the field to a lab?
- What is the Chain-of-Custody process for your project?



SAMPLE IDENTIFICATION

All samples will be identified with a unique number and samples labeled with the following information.

- Sample ID
- Location ID
- Date
 Time
- Time
- Initials of sample collector
 Sample type (normal or QC)
- Preservative method (if any)

[EXAMPLES ONLY - EDIT AS NEEDED]

FIELD MEASUREMENTS

If possible (if equipment is available), water quality parameters including [Insert project-specific information, such as flow rate, pH, dissolved oxygen, and temperature] will be measured prior to collecting samples for laboratory analyses. [Note: If you will be collecting geospatial points then please note in this section and in Table 2]

QC SAMPLE COLLECTION

Equipment blanks, field duplicates, and matrix spikes will be collected at a frequency of about 1 per 20 normal samples, or 1 per sampling event, whichever is greater. Matrix spikes will be collected as normal samples and will be spiked at the laboratory prior to sample preparation. [If you are not collecting QC Samples then note that this section is not applicable, explain why, and remove references to QC samples in the bollerplate text in other sections.]

FIELD INSTRUMENT CALIBRATION

Routine field instrument calibration will be performed at least once per day prior to instrument use to ensure instruments are operating properly and producing accurate and reliable data. Calibration will be performed at a frequency recommended by the manufacturer. [Explain what instruments will be used on this project, or reference discussion elsewhere in the QAPP, and provide a reference for the manufacturer's instructions]

DECONTAMINATION PROCEDURES

All field and sampling equipment that will contact samples will be decontaminated after each use in a designated area. [If applicable, describe where the decontamination area would be and who would determine the placement for this site]

FIELD DOCUMENTATION

All field activities will be adequately and consistently documented to ensure defensibility of any data used for decision-making and to support data interpretation.

Pertinent field information, including (as applicable), the [Insert field project-specific sampling/measurement parameters, such as width, depth, flow rate of the stream, the surface water condition, crop and cultivation practices and evidence of pesticide/fertilizer or sediment management, and location of the tributaries] will be recorded on the field sheets [Provide field sheets as an appendix and reference here. Explain whether data would be

How? Data Methods

2.0 Data and Sample Acquisition

What tools/instruments are you using to collect the data?

What standards/ procedures are you adhering to?

Where is the collected data being stored and who is maintaining it?

Include comment or data sheets if applicable

Include citations/references for methods



Photo Credit: NFWF



<u>How?</u> <u>Sampling</u> <u>Strategy</u>





Questions?



<u>Secondary</u> <u>Data</u>



Section 1.0 - If Secondary Data sources are known:

List potential sources in a table or add to appendix, summarize in document, and reference Include full reference citation (author, title, year, etc.) and parameters to be evaluated

DQO/QAO - Reliability – Where did the data come from? How was it collected? What is the margin of error on their data?

DQO/QAO - Representation – How is this data related to your study? Why is it "fit for use"?



Bounding Secondary Data

Secondary Data with Unknown Sources

- Who is conducting secondary data research and how?
- Explain potential sources of information (ex. NOAA precipitation data or county-level population data)
- Explain parameters to be researched. Why were these parameters selected and by whom?



ALL Secondary Data DQOs and QAOs

- Define the temporal boundaries
- How recent does it need to be?
- Will you use the most recent available data? Why or why not?
- If data layers or sources represent a varying time scale, will data be comparable?







<u>Geospatial</u> <u>Data</u>

 If geospatial data/layers are being collected, the QAPP requirements are similar to secondary data requirements for QAPP compliance

 If geospatial data/layers are being developed, the QAPP requirements are similar to fieldwork data requirements for QAPP compliance



Stakeholder Data

- Who are the stakeholders? How and why are they selected?
- How will they be invited to the meeting/workshop/survey and by whom?
- How long is the workshop and who will facilitate? What is the agenda?
- What information will participants be given ahead of time?
- How will notes be recorded and by whom? Who will review for accuracy?
- What type of survey will be developed?
- How will results be evaluated or tallied?





Modeling Data

- What model is being used on the project and for what purpose?
- Who selected the model and why is it the "best fit" for this project?
- Will use of the model require specialized software or training for the project team?
- What are the inputs to the model and where will this information come from?
- What are the anticipated outputs?





3.0 Analytical Requirements

- What methods are you using for analysis?
- What preparatory methods will be used?
- SOPs can be appended and referenced to
- Provide a brief summary and reference to those documents
- Reader/reviewer should be able to clearly see how analysis will be conducted
- IF toxicology is being conducted this information should be discussed here as well





<u>How?</u> <u>Template</u> <u>Overview</u>



4.0 Quality Control Requirements

- How are you ensuring that you are meeting your QAOs? (this can reference back up to Table 2.0 if it is defined)
- How are you defining key accuracy and precision measures in the field and/or lab?
- Identify field and laboratory QC Samples, their frequency and acceptance criteria.
- Are there any additional internal QC processes that are assuring your project?
- Remember to be consistent in the document with QC information



5.0 Instrumentation and Equipment Preventative Maintenance

- ✓ Applies to <u>ALL</u> field equipment and lab instrumentation (even binoculars)
- You may reference to equipment manuals, lab QA manual, or SOP that contains this information
- Identify details regarding calibration of instrumentation or equipment
- Identify what the corrective action is if 'out of compliance'
- Discuss if/how calibration information is logged or recorded





<u>How? Template</u> <u>Overview</u>

6.1 Data Assessment Procedures

- Who reviews data for accuracy? (supported by DQO and QAO discussion)
- When is data reviewed postfieldwork?
- How is data determined to be final and usable for project deliverables and reporting?
- How is data managed and stored?
- What is the procedure for noncompliant data?



8.0 References

- Include references in the QAPP text
- ✓ Template is for example only



9.0 Appendices

Update appendix list



Photo Credit: Cardno, Inc.

- ✓ Identify all appendices in the document text
- Make sure that all appendices are present when submitted
- Ensure that appendices are in the correct order (see list)
- \checkmark If a lab certification is appended, make sure it is current



Questions?



When? Timeline and Coordination with NFWF, Cardno & EPA

QAPP is required to be completed and approved before data collection begins

Grantee prepare Sections 1.2 – 1.3 of QAPP template & submit to NFWF

NFWF submits to draft QAPP to Cardno for comprehensiveness and compliance review with EPA requirements

Draft submittal of full QAPP to Cardno (30-day review period)

Cardno produces a comment matrix for QAPP draft



<u>When? Timeline and Coordination</u> with NFWF & Cardno

NFWF returns the comment matrix to grantee. If significant # of comments NFWF will set up call with Cardno and Grantee

Grantee revises draft QAPP based on comment matrix & returns it to NFWF

NFWF 2nd draft submittal to Cardno (30-day review period)

If 2nd draft ready to go NFWF packages & submits to EPA. If 2nd draft not ready to go NFWF sets up call with Cardno and Grantee

After NFWF submission, EPA review and comment (60-day review period)



<u>When? Timeline and Coordination</u> with NFWF, Cardno & EPA

EPA sends comments to NFWF concerning draft QAPP to distribute to grantees

Grantee makes requested revisions from EPA to draft QAPP & returns it to NFWF

NFWF re-submits draft QAPP to EPA (60-day review period)

If acceptable QA/QC, EPA notifies NFWF

NFWF notifies grantee, manages signature process, packages final QAPP and EPA LIS Futures Fund Project Officer approves QAPP



<u>Finish Line – Tips for Getting</u> Your QAPP Approved Quickly

1. Communicate early

- Request phone call to discuss how to complete the template or how to address Cardno revision comments
- Request example QAPPs
- Submit Sections 1.2 and 1.3 for review before developing the rest of the QAPP







<u>Finish Line</u> <u>– Tips for</u> <u>Getting</u> <u>Your QAPP</u> <u>Approved</u> <u>Quickly</u>



2.0 Develop a Readable Document

- Use correct grammar and complete sentences
- Have qualified person write the QAPP
- QAPP must be stand-alone document. The person reading it should be able to understand what you are doing, why, and how.
- The QAPP will be read and approved by regulators; therefore, it needs to pass compliance checks for final signature.



Finish Line – Tips for Getting Your QAPP Approved Quickly



2.0 Develop a Readable Document

- Informal or simple project actions need to be described (e.g. taking photos to document site conditions) in addition to complex or defined methods
- Non-certified labs are still labs
- Remove instructional text from QAPP template
- Revise boilerplate text that is not relevant to your project
- If a section or subsection is not applicable to your project, explain why. 2-3 short sentences.



<u>Finish Line – Most Common</u> Problems that Lead to Delays

- 1) Vague references to project activities or incomplete project information
- 2) Not describing all data collection activities or completing all relevant sections of the template
- Describing data activities not included in the project grant scope of work
- 4) Not reading directions to add, edit, or delete example text (e.g. please delete example references that do not apply to your project)
- 5) Lack of clarity in QAPP, circulatory. For most projects, the same information is required in different sections. This is common and it means you need to simply reference a previous section if information is already discussed





<u>Finish</u> <u>Line –</u> <u>Second</u> <u>Draft Tips</u>







NFWF

Finish Line



Remember – your project has been awarded, approved, and funded as proposed. Your project, methods, project team, or reasoning for the project should be discussed in the QAPP. You are simply documenting and explaining the process as required by the EPA.

Cardno's comments are to ensure the QAPP complies with EPA requirements and is a clear, stand-alone document.



NFWF LISFF Grant Program



Questions?



PHOTO CREDIT: NFWF

