Long Island Sound Futures Fund

QUALITY ASSURANCE PROJECT PLAN (QAPP) TRAINING

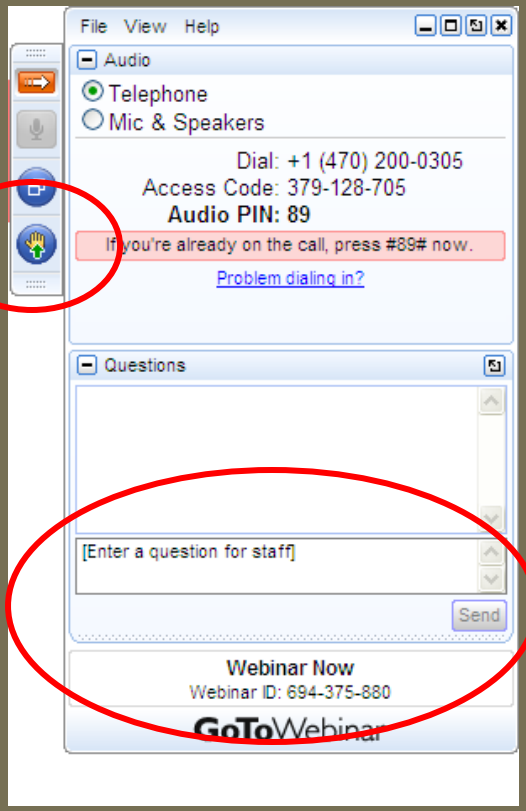
WEBINAR INSTRUCTIONS

- To improve sound quality, all participants will be muted for the duration of the webinar. If you want to ask a question you have two options:

    1. Enter your query into "Enter a question for staff" and click send. We will read your question aloud when we pause for Q&A.
    2. Send it to Erin.Lewis@nfwf.org after the webinar.
    3. We will develop a FAQ of outstanding questions and post it on the LISFF QAPP website.

    If you experience a technical glitch, type it into the question box…We may not be aware of the glitch unless you say something ☺

The webinar will recorded and available for download at nfwf.org/lisff under Application Information tab



Webinar Agenda

- Who? Introductions
- What? QAPP Requirement and QA/QC
- Why? Purpose
- What? Environmental Data and DQOs
- What? QAPP Overview
- How? QAPP Development Step-by Step
- When? QAPP Timing & Approvals
- What? QAPP Resources
- Contacts & Website

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Who? NFWF

Lynn Dwyer, NFWF

- Program Director, Coastal Programs
- Lynn.Dwyer@nfwf.org
- (631) 312-8999

Erin Lewis, NFWF

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

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Who? Cardno

Jennifer Wallace, Cardno, Inc.

- Senior Environmental Project Scientist/Project Manager
- Providing QAPP Technical Assistance to NFWF grantees since 2011

Cheryl Hennessy, Cardno, Inc.

- Senior Environmental Project Scientist/Project Manager
- Providing QAPP Technical Assistance to NFWF grantees since 2015

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Who? Cardno Team

- Biological/Habitat Assessment
- Dam Removal/Passage
- Living Shorelines and Shellfish
- Green Infrastructure
- Assessment and Restoration
- Water Quality and Monitoring
- Restoration Operations and Management
- Stakeholder Outreach and Survey
- Stormwater Assessments/Management
- Coastal Zone
- TMDLs
- Additional Information www.cardno.com

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What? NFWF LISFF QAPP Requirement

- Projects funded by the LISFF require EPA funded projects complete a Quality Assurance Project Plan (QAPP) before project activities, specifically data collection, are undertaken. Grantees agree to these terms upon signing of the grant contract

- Please review Standard Terms and Conditions in your NFWF grant agreement (contract) or at the LISFF QAPP website

- QAPPs must be approved by EPA in order to be deemed complete

What? QA/QC

Quality Assurance (QA) – an integrated system of management activities involving planning, implementation, documentation, assessment, reporting, and quality improvement to ensure that a process, item, or service is of the type and quality needed and expected by the client

Quality Control (QC) – the overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established by the customer; operational techniques and activities that are used to fulfill requirements for quality

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Why? Purpose

Adequate QA/QC ensures transparency, consistency, comparability, completeness, and confidence in project recommendations and conclusions

The success of a project or program depends on the quality of the data collected

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Why? Purpose

- QA/QC ensures that the data collected for the characterization of environmental processes and conditions are of the ***appropriate type*** and ***quality for their intended use*** and environmental technologies ***are designed, constructed*** and ***operated according to defined expectations***

- A QA/QC Plan provides a project-specific **"blueprint"** for obtaining the type and quality of environmental data needed for a specific decision or use

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What? QAPP Development Guide @ LISFF QAPP Webpage

- Describes how NFWF will plan, implement, and assess the effectiveness of its quality assurance and quality control operations applied to the LISFF grantees

- LISFF awardees whose projects will **collect, analyze, or use primary and/or secondary environmental data** for the purpose of making decisions or drawing conclusions will be required to submit a QAPP for approval by EPA

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What? QAPP Overview

- **Ensures that data collected, analyzed, or used in a project are**

  - of the needed and expected quality for their desired use.

  - supports the project's intended application of these data.

- Defines and assigns QA and QC responsibilities
- Describes the processes and procedures used to plan, implement, and assess the effectiveness of the quality system.

What? Environmental Data

Environmental data includes:

- ***Primary data*** - information collected directly from measurements
- ***Secondary/Existing data***

  - data that were collected for other purposes or obtained from other sources

  - includes literature, industry surveys, models, data bases, and information systems

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What? Environmental Data

Environmental data are any measurements or information that include the following:

- environmental processes, location, or conditions;
- ecological or health effects and consequences; or
- the performance of environmental technology.

Examples of Environmental Data:

- Sample Results, Instrument Readings, Observations, Incidence rates, Measurements, Counts/Frequency Distributions, Survey Results

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What? Environmental Data Examples

- **Developing and evaluating models** of environmental processes to characterize environmental processes or conditions;
- **Establishing the ambient conditions** in air, water, sediments, or soil, in terms of physical, chemical, or biological characteristics
- **The use of the technology to generate and/or collect data** (e.g., treatability and pilot studies)
- **Map environmental processes and conditions** (e.g., GIS);
- **Developing IT and management system operations** that impact the quality of the results of environmental programs

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What? Environmental Data

- Primary data collection, secondary data usage, derivation of uncertainty tolerance limits for data and data processing project activities funded by NFWF must be described or referenced in QAPPs.

- **Even if secondary data comes from trusted data sources (i.e. U.S. Census, USGS, CT DEEP, NYS DEC etc.) it must be evaluated for appropriate use for your project**

What? Data Quality Objectives (DQOs) – Pre QAPP

- **Establishes criteria for data quality and for developing data collection designs**
- **Defines data collection design** including
  - when to collect samples,
  - where to collect samples,
  - the acceptable level of data uncertainty and decision errors for the study, and
    - how many samples to collect
    - **Example of a DQO**
- **Ensures that the type, quantity, and quality of environmental data used in decision-making will be appropriate for the intended application**

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What? Quality Assurance Objectives (QAOs)

- Support DQOs
- Clarify project objectives
- Define a tolerable level of potential decision error for data collected on a project
- QAOs are the metrics that assure DQOs were met

What? QAPP Overview – Regulations and Tools

- EPA Regulations, Policies and Guidance https://www.epa.gov/quality
- EPA Quality Management Tools https://www.epa.gov/quality/epa-quality-management-tools-projects
- EPA Requirements for Quality Management Plans (QA/R-2) (EPA 2001, reissued 2006) (*http://www.epa.gov/quality/epa-qar-2-epa-requirements-quality-management-plans*); or
- EPA's QAPP Requirements (EPA QA R-5) (EPA 2001, reissued 2006) and Guidance (EPA QA G-5) (EPA 2002) documents for information on data-specific quality assurance activities.
  - QAPP Requirements - https://www.epa.gov/quality/epa-qar-5-epa-requirements-quality-assurance-project-plans
  - QAPP Guidance - http://www.epa.gov/quality/guidance-quality-assurance-project-plans-epa-qag-5

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What? QAPP Overview – Regulations and Tools

- Other Useful Resources Citizen Science QA QC from EPA
- https://www.epa.gov/citizen-science/quality-assurance-citizen-science-projects
- https://www.epa.gov/citizen-science/quality-assurance-handbook-and-guidance-documents-citizen-science-projects

What? QAPP Template Overview

- www.nfwf.org/programs/long-island-sound-futures-fund/quality-assurance-project-plan-development-guidance
- *QAPP Template*
  1. Project Management
  2. Data Acquisition
  3. Analytical Requirements
  4. Quality Control Requirements
  5. Instrumentation and Equipment Preventative Maintenance
  6. Data Management
  7. Data Validation and Usability
  8. References

What? QAPP Overview

- *LISFF Grant Program QAPP Template*
  1. Project Management
     1. Title and Approval Sheet
     2. Contact Information
        - Who can answer QA/QC questions? Who are the project leaders?
     3. Project Objectives and Approach – from proposal
        - What is the purpose of the project?
        - What type of data are you collecting/using?
        - How will the data be used to support the project objective?
        - Description of intended Decisions and/or Conclusions
        - What is the envisioned outcome?

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What? QAPP Overview

1. Data Quality Objectives
   - Describe why the type of data you are collecting is appropriate for your project
   - Measurement Metrics for Data Collection
   - May need to be requested from lab
2. Documentation and Records
   - Where are the files stored and for how long?

How? QAPP Template

- *QAPP Template*
  1. Project Management
  2. **Data Acquisition**

2.1 Data Collection Information

- What are you collecting?

2.2 Sample Storage, Preservation, and Holding Times/Data Collection Documentation

- How are you collecting data?
- What tools/instruments/sample containers are you using?
- Calibration? Field documentation/data sheets?

2.3 Sample Custody and documentation

- tracing data sheets from field collector to final holding location/Project Manager – chain of custody

Photo Credit: Cardno, Inc.

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Data Methods

- What are you collecting?
- How are you collecting it?
- Who is collecting the data and what training have they received?
- Who trained the data collectors?

Photo Credit: NFWF

Data Methods

- 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

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Sampling Strategy

The sampling strategy for a project needs to include:

Evidence to demonstrate that the strategy is appropriate for meeting primary project objectives,

- Identify sampling/monitoring points
- Survey design
- Frequency of sampling/monitoring events
- Numbers for each sample type and/or location, including QC and reserve/blank samples.
- The planned approach for evaluating project objectives

Primary Data - Sampling Procedures

- Site preparation needed prior to sampling/monitoring
- Calibration procedures
- Describe how cross-contamination between samples is avoided.
- Containers used for sample collection, transport, and storage for each sample type
- Method for uniquely identifying each sample
- Sample preservation methods (e.g., refrigeration, acidification, etc.)
- Holding time requirements

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Quality Assurance Objectives

Parameter	Method	Detection Limit	Sensitivity	Precision	Accuracy	Completeness
Flow						80%
Temperature	e.g. Thermometer (-5 to 50)					80%
Dissolved Oxygen						80%
pH						80%
Turbidity						80%
Total Dissolved Solids						80%
Total Suspended Solids						80%
Chloride						80%
Ammonia						80%
Nitrate						80%
Phosphate						80%
Sulfate						80%
Toxicity						80%
Toxaphene						80%
Pyrethroids						80%

QAOs are metrics that show the Project DQOs were met.

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Secondary Data

Data Source

- References
  - If citing an internet source print a hard copy and include date printed
  - Create phone or email log if applicable
- Reliability – Where did the data come from? Who collected it? How? What is the margin of error on their data?
- Representation – How is this data related to your study?
- Develop a cumulative analysis of data sources
- GIS – What data was used to create maps? What was their QA/QC process? What is the precision of the data shown on the maps?
- Supporting decisions or conclusions
- If using a secondary data source indicate how the source will be identified, and give an overview of acceptance criteria for datasets selected for use

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What? QAPP Overview

- *LISFF Grants Program QAPP Template*
  1. Project Management
  2. Data Acquisition
  3. **Analytical Requirements [as applicable]**
     - **3.1 Chemistry Analysis**
     - **3.2 Toxicity Testing**
     - **3.3 Laboratory Standards and Reagents**
     - **3.4 Sample Preparation Methods**

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What? QAPP Overview

- *QAPP Template*
  1. Project Management
  2. Data Acquisition
  3. Analytical Requirements
  4. **Quality Control Requirements**
     - **4.1 Quality Assurance Objectives**
     - **4.2 Measurement Performance Criteria**
     - **4.3 Internal Quality Control**
     - **4.4 Field Quality Control – blanks – duplicates**
     - **4.5 Lab Quality Control**

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What? QAPP Overview

- *QAPP Template*
  1. Project Management
  2. Data Acquisition
  3. Analytical Requirements [as applicable]
  4. Quality Control Requirements
  5. **Instrumentation and Equipment Preventative Maintenance – All field sampling equipment**
     - **5.1 Sample Equipment Cleaning Procedures**
     - **5.2 Analytical Instrument and Equipment Testing Procedures and Corrective Actions**
     - **5.3 Instrument Calibrations and Frequency**

Photo Credit: Cardno, Inc.

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What? QAPP Overview

- *QAPP Template*
  1. Project Management
  2. Data Acquisition
  3. Analytical Requirements [as applicable]
  4. Quality Control Requirements
  5. Instrumentation and Equipment Preventative Maintenance
  6. **Data Management**
     - **6.1 Data Assessment Procedures**
     - **6.2 Data to be Included in QA Summary Reports**
     - **6.3 Reporting Format**

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What? QAPP Overview

- *QAPP Template*
  1. Project Management
  2. Data Acquisition
  3. Analytical Requirements [as applicable]
  4. Quality Control Requirements
  5. Instrumentation and Equipment Preventative Maintenance
  6. Data Management
  7. **Data Validation and Usability**
     - **7.1 Laboratory Data Review, Verification, and Reporting**
     - **7.2 Self-Assessment, Data System Audits**

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What? QAPP Overview

- *Grant Program QAPP Template*
  1. Project Management
  2. Data Acquisition
  3. Analytical Requirements [as applicable]
  4. Quality Control Requirements
  5. Instrumentation & Equipment Preventative Maintenance
  6. Data Management
  7. Data Validation and Usability
  8. **References**
  9. **Appendices**
     - **Project Site Map(s)**
     - **Standard Operating Procedures**
     - **Field Data Sheet**
     - **QA Summary Report**

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What? QAPP Overview

Grant Program QAPP Templates

- QAPP Template for Lab-work/Fieldwork Projects
- QAPP Template for Fieldwork/Non-lab Projects
- QAPP Template for Non-fieldwork Projects

When? QAPP Timing

Submission, Review, Comment and Approval Timing

- **Prepare a draft QAPP:** Prior to NFWF submission of your draft QAPP to EPA, you will submit the draft to NFWF **at least 3 months** in advance of starting data driven activities for review and comment. Send to Erin.Lewis@nfwf.org

- Please note the time required for review and comment is dependent upon the quality of the QAPP submission and thus may involve several iterations prior to submission by NFWF to EPA

When? QAPP Timing

Submission, Review, Comment and Approval Timing

- **NFWF submits draft QAPP to EPA:** After Cardno review, and comment and grantee revision of a draft QAPP, NFWF submits the document on your behalf to EPA

- Please note **allow a minimum of 60 days for review and comment about draft QAPP documents by EPA.** Please also note review and comment is dependent upon the quality of the QAPP submission and thus may involve several iterations after submission by NFWF to EPA and prior to EPA approval.

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When? QAPP Approval

- Project QAPP must be completed and approved by NFWF prior to data collection
- Cardno QAPP Technical Assistance Providers - Jennifer Wallace, Cheryl Hennessy

Photo Credit: NFWF

What? Next Steps!

- **Take a look at the LISFF QAPP website**
  - **https://www.nfwf.org/programs/long-island-sound-futures-fund/quality-assurance-project-plan-development-guidance**

- **Get ready for ndividual QAPP calls**
  - Erin Lewis (Erin.Lewis@nfwf.org) will reach out to the grantee contract of record with next steps about scheduling an individual QAPP call with Cardno/NFWF
  - Please remember to prepare a list (names & emails) of each person who should participate on the call

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Long Island Sound Futures Fund

Contacts & Website

Lynn Dwyer, Program Director
Lynn.Dwyer@nfwf.org
631-312-8999

Erin Lewis, Program Coordinator
Erin.Lewis@nfwf.org

***Website**: https://www.nfwf.org/programs/long-island-sound-futures-fund/quality-assurance-project-plan-development-guidance*

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