Citizen Science QAPP Template #1
Title and Approval Page

Bronx River Pathogen Indicator Project

Bronx River Alliance

June 1, 2014:

Project Leader: Damian Griffin 5/28/14
Signature/Date
Damian Griffin/ Bronx River Alliance

Project QA/QC Manager: Robin Kriesberg 5/28/14
Signature/Date
Robin Kriesberg/ Bronx River Alliance

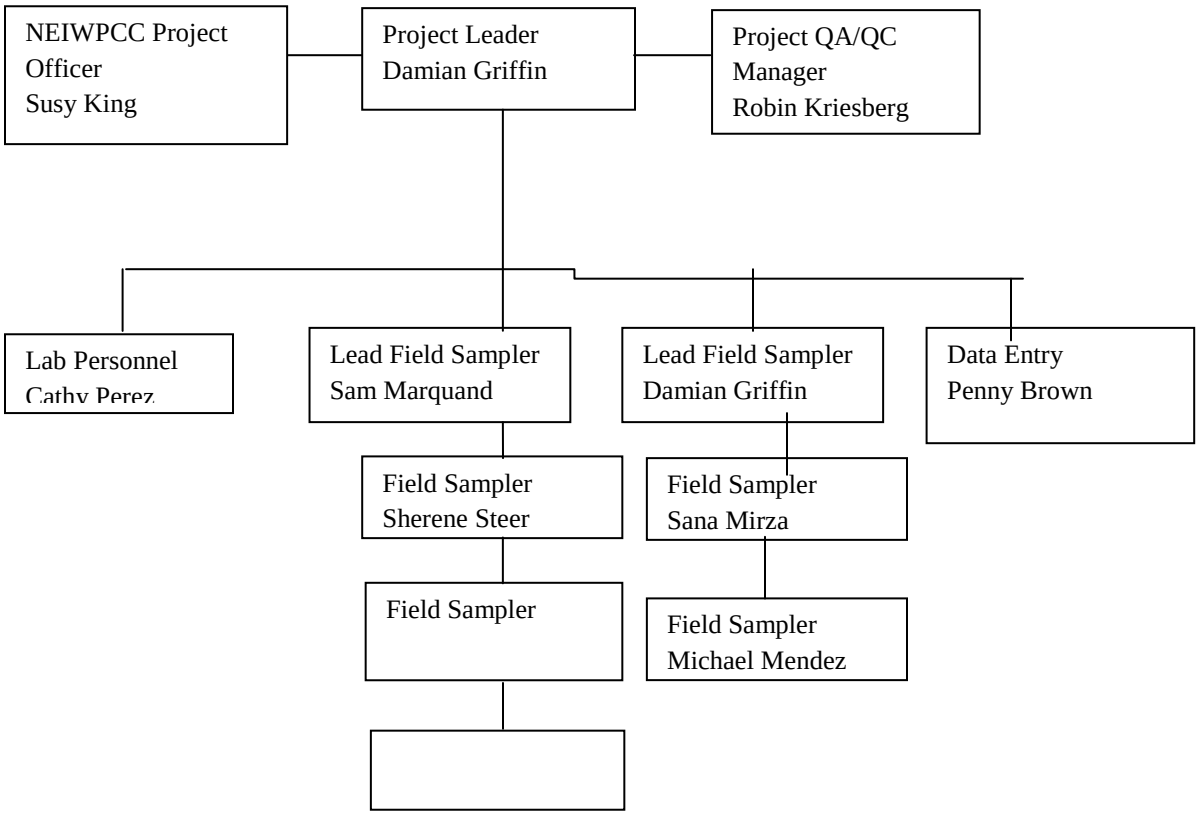
NEIWPCC Project Officer: 6/2/14
Signature/Date
Susy King/ NEIWPCC

Lead Field Sampler: 5/28/14
Signature/Date
Sam Marquand/ Rocking the Boat

Lead Field Sampler: Damian Griffin 5/28/14
Signature/Date
Damian Griffin/ Bronx River Alliance

Citizen Science QAPP Template #2A
Project Organization Chart

The organization chart shows the lines of communication and reporting for the project, similar to a chain of command. Fill in the names of the individuals and their titles (where applicable). If necessary add more boxes to accurately reflect the communication and reporting structure of the project.



Citizen Science QAPP Template #2B
Project Distribution List

The distribution list ensures everyone involved with the project receives a copy of the QAPP and is aware/clear about the work being conducted. It also provides the contact information for those involved with the project. For this table, input the names and contact information for all individuals who will need to get a copy of the QAPP.

Name/Title	Contact Information
Damian Griffin Project Leader	Email:damian.griffin@parks.nyc.gov Phone: 718 430 4614
Robin Kriesberg Project Quality Assurance/Quality Control Manager	Email: Robin.kriesberg@parks.nyc.gov Phone: 718 430 - 4690
Susy King NEIWPCC Project Officer	Email: sking@neiwpcc.org Phone: 978-349-2506
Sam Marquand Field Sampler	Email: sam@rockingtheboat.org Phone: 718- 466-5799
Michael Mendez Field Sampler	Email: michael.mendez@parks.nyc.gov Phone: 718 430- 1864
Penny Brown Data Entry	Email: penny.brown@parks.nyc.gov Phone: 718- 430 4648
Cathy Perez Lab Personnel	Email: cathy@rockingtheboat.org Phone: 718-430 4648

Citizen Science QAPP Template #3
Project/Task Organization

Fill in the name, title, organization affiliation and responsibilities sections of the table below. For the responsibilities section, state what work/task each individual will be doing throughout the project. The responsibilities section provides an outline of the work that will be done for the project. Project specific details will be addressed in later sections of the QAPP. **NOTE**: The names and titles should be consistent in Templates #1, #2A, #2B, and #3.

Name	Title	Organizational Affiliation	Responsibilities (specific to this project)
Damian Griffin	Project Leader	Bronx River Alliance	Coordinate activities for the Bronx River Alliance and act as field leader
Robin Kriesberg	Project Quality Assurance/Quality Control Manager	Bronx River Alliance	Responsible for ensuring the QAPP is fully implemented, reports deficiencies to the project managers and oversees all QA/QC related activities
Sam Marquand, Sherene Steer, Sana Mirza, Michael Mendez	Field Personnel	Rocking the Boat, Bronx River Alliance	Sampling and delivery of all samples to lab
Penny Brown	Data Entry	Bronx River Alliance	Uploading all data provided by field personnel
Cathy Perez	Laboratory Personnel	Rocking the Boat	Maintains lab and coordinates laboratory procedures

Citizen Science QAPP Template #6
Project Location

Project Location

Provide a description of the site and sampling locations and how they were chosen. Provide the rationale for selecting sample locations, how the locations will be reached (wading, boat, bridge access, etc, and how the locations will be sampled (weighted sampler, rod and clamp, collection by field sampler, etc). Provide a map showing the location and any other relevant information for the project such as GPS coordinates of sampling locations. Tie this information back to the goals and objectives of the project.

1. **Muskrat Cove 1:** where the river enters the Bronx from Westchester County, which does not have a combined-sewer system but does have illegal/accidental sewage discharges into the river; this site offers a baseline to gauge pathogen indicator levels as the river enters NYC. Location will be waded and sampled using Method A, using hand sampling.*
2. **Muskrat Cove 2:** a stormwater outfall carrying a constant flow from Mc Clean Avenue in Yonkers which in the past has been shown to carry sewage from illegal sewage connections. Location will be waded and sampled using Method A, using hand sampling.
3. **East 219th Street:** at the Shoelace Park canoe/boat launch one mile south of Site #2 was chosen because: 1) it is downstream of another Yonkers outfall previously found not to carry any pathogens; 2) it is downstream of a Metro North rail station; and 3) it is a site accessible to the public. (Some sites have been chosen to increase the opportunity for field outreach to the public). There is small dock that enters the channel, and samples will be taken following Method A, hand sampling.
4. **182nd street dam:** Southern most freshwater impoundment, just north of the river's estuarine tidal influence . This site will be the entry point for migratory fish through a newly constructed fish passage. Samples here are to be taken after the river flows past the Bronx Zoo complex but before it reaches CSO outfall HP-007. The fish ladder will offer access the direct flow of the river. Samples will be taken using Method A and hand sampled
5. **Starlight Park:** north of the tidal weir (a low-head dam that is partially exposed at low tide) first sample site downstream of two CSOs, HP 007 and HP 004. One mile south of Site #5 and the river's first deep-water section, Sites 6 and 7 are only 20 yards apart but separated by a three-meter-high tidal weir, each site may have different levels and varieties of bacterial pathogens, depending on the tidal cycle. sampling both upstream and downstream of the weir may allow for possible distinction between pathogens carried downstream in river flow, or upstream on flood tide. Starlight Park is also a major area of public access. The dock enters the channel and samples will be taken from the dock following Method A, hand sampled.
6. **Starlight Park:** south of the weir; The dock enters the channel and samples will be taken from the dock following Method A, hand sampled.
7. **Hunts Point Riverside Park:** across from the bulwarked CSO outfall HP-008; past testing found that tidal influences may cause pathogens to collect at this site, which is popular with fisherman and

unauthorized swimming. The dock enters the channel and samples will be taken from the dock following Method A, hand sampled.

8. **Soundview Park:** directly in front of CSO outfall HP-009, which discharged more than 800 million gallons of untreated stormwater/sewage in the past year; it is also near CSO outfall HP-010. The site will be reached by boat and sampled using method A, hand sampled.
9. **Soundview Park:** at the river's mouth, which will provide a baseline of water quality as this area is affected by (and affects) the East River's water quality. The site will be reached by boat and sampled using method A, hand sampled.

* Method A pertinent information:

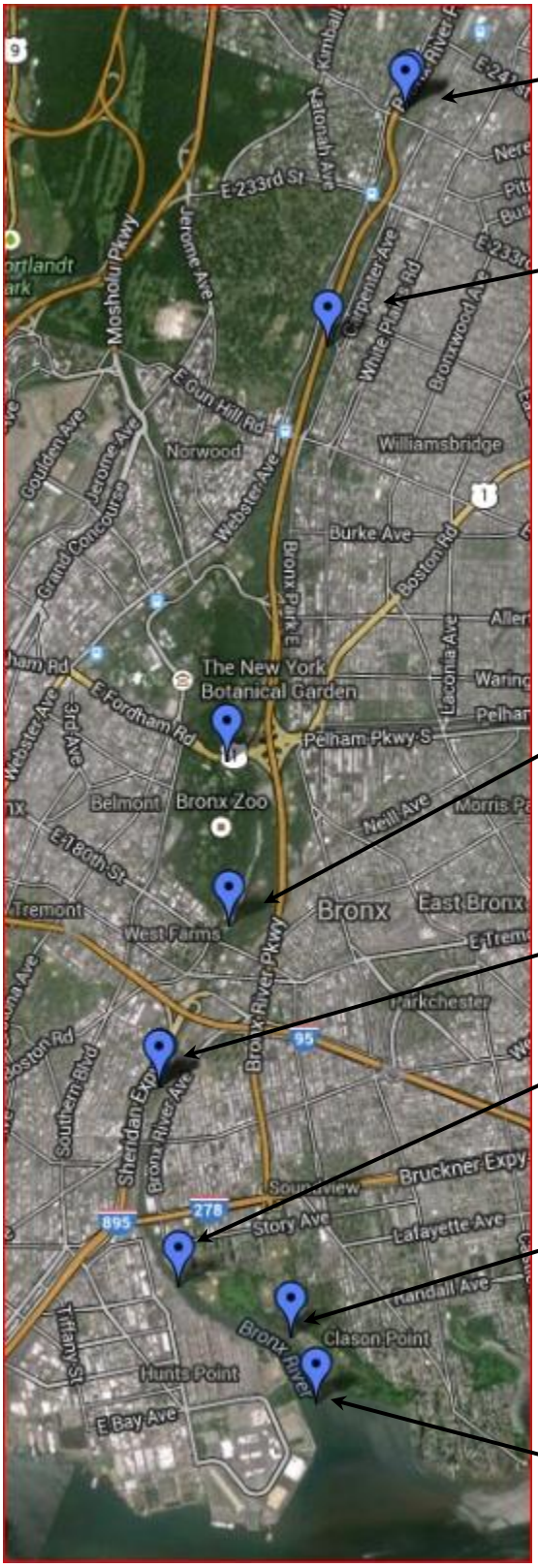
Water samples will be collected using the following methodologies. The method used will be dependent on what the water depth and field/site conditions are when the sampling teams arrive at the station. Samples will be collected into sterilized 120 ml HDPE plastic bottles. Care must be taken not to touch the cap or the inside of the bottle to avoid contamination. Care must also be taken not to disturb the waterbody substrate.

Method A (See Figure 5.2 below):

ATTACHMENT: ***Maps***

Sampling Site #	Sampling Site Name	GPS Coordinates*	
1	Muskrat Cove 1	40.90142683892559, -73.85972142219543	Mid channel sample, wading
2	Muskrat Cove 2	40.9011673423199, -73.8600218296051	Mid channel sample, wading
3	East 219th Street	40.884451994702665, -73.86734426021576	Sample from dock in channel
4	182nd Street	40.84350548994645, -73.87654423713684	Top of fish passage
5	Starlight Park North Dock	40.83228774455079 ,-73.88283669948578	Sampled from end of dock in channel
6	Starlight Park South Dock	40.83225121478278, -73.88302445411682	Sampled from end of dock in channel
7	Hunts Point Riverside Park	40.81804772785357, -73.88125419616699	Sampled from end of dock
8	Soundview Park HP 009	40.81443446654404, -73.87076675891876	Mid stream sample, from boat
9	Soundview Park Mouth of River	40.80974505311306, -73.86821866035461	Mid stream sample, from boat

* Preliminary coordinates for reference only taken from Google Maps. Actual coordinates will be taken in the field.
Map on Google Maps: http://goo.gl/maps/kKMDn



Sites 1 and 2 Muskrat Cove

Site 3 219th Street

Site 4 182nd Street Fish Ladder

Sites 5 and 6 Starlight Park

Site 7 Hunts Point Riverside Park

Site 8 Soundview Park- HP 009

Site 9 Soundview Park Mouth of the Bronx River

Citizen Science QAPP Template #10B
Equipment List

Equipment List

Generate a list of all field equipment, supplies and personal protective equipment that will be supplied by the contractor for the project.

Waders
Cooler
Life Jackets
Boat and paddles
Bicycle
Gloves

Citizen Science QAPP Template #13
Training and Specialized Experience

Training

In this section, state any required training that an individual involved with the project would need. Also include any refresher trainings that may be conducted.

- In the **Personnel/Group to Be Trained** section, state who will need the specific training and how many people will be trained.
- In the **Description of Training** section, state who will perform the training and what kind of information the trainee will learn.
- In the **Frequency of Training** section, state how many times the training will be conducted during the project.

Personnel/Group to be Trained	Description of Training	Frequency of Training
Damian Griffin Sam Marquand Michael Mendez Alex Nieves Michelle Cropsey Sana Mirza Cathy Perez Sherene Steer	Proper use of YSI 556 MPS, GPS unit and water sampling equipment. Instruction on lab analyses	Session at the beginning of the sampling season
Damian Griffin Robin Kriesberg Penny Brown	Data Management and upload of data to WQX/STORET	Session at the beginning of the sampling season, STORET upload training after data collection is complete

Specialized Experience

If any individuals have specialized experience that will be utilized by the project please complete the specialized experience table. State who the individual is, what specialized experience they have related to the project and their years of experience.

Person	Specialized Experience	# of Years of Experience

Citizen Science QAPP Template #16
Data Review and Usability Determination

Describe the process used to determine the usability of your project data. If your data review does not uncover any issues and all of your QC criteria are satisfied, then your data will be assumed to be usable for the intended project objective. However, this is not always the case and so you will need to lay out a process for determining data usability in the event that all QC criteria are not met.

Data Management

All data will be collected on the field/calibration/laboratory datasheets. After each field sampling event, the data will be checked for completeness, missing information or questionable data. The individual responsible for data entry will contact the field sampling team for the missing data and have the team clarify any discrepancies with the data. The data will be entered into preformatted electronic spreadsheets. The preformatted electronic spreadsheets will be supplied by EPA Region 2. The Project QA/QC Manager will review 10% of the data to verify accuracy of the data entered into the spreadsheet from the field datasheets. The validated and completed electronic spreadsheets will be emailed to Stanley Stephansen of EPA Region 2 or the designated contact for assistance in uploading the data into WQX/STORET during the initial phases of the project. Data will be uploaded into WQX/STORET on a regular basis by the contractor as data is verified and approved by the Project QA Manager. At the end of the project reports and data downloads will be retrieved from the STORET database to confirm the completeness and accuracy of the project data. The original datasheets will be stored by the Project Leader for 5 years after the completion of the project in the project file. Copies of the field/lab datasheets will be sent to NEIWPCC as part of the quarterly reports.

Data Review and Usability Determination

Data Checks

Field/Lab	Data Management
Monitoring performed per SOPs or QAPP	Data entry and transcription errors
Measurements performed correctly	Calculation/reduction errors

Calibrations performed correctly	Proper data and document storage
Data meets acceptance criteria	Missing data documented
Holding times met	
Evaluate any deviations from QAPP or SOPs to determine the impact to the data and project objectives	

Category	Range	Description
Low	< 61 MPN/100 mL	61 is the lowest criteria for both Freshwater and Marine Enterococcus WQS Single Sample Maximum Concentration (SSMC) for Primary Contact Designated Beach Site (using 1986 WQS Enterococcus)
Moderate	61 – 104 MPN/100 mL	104 is the SSMC for Marine SSMC and 61 is the SSMC for Freshwater Primary Contact Designated Beach Site
High	105 – 500 MPN/100 mL	500 is the SSMC for Marine SSMC for Infrequently used Full Body Contact Recreation (575 for freshwater)
Very High	501 & > MPN/100 mL	501 would not meet any SSMC for any full body contact in marine water (575 for freshwater)

All data issues identified by the Project QA Manager, including but not limited to the items stated in the Data Checks table above, will be discussed with the Project Leader to determine data usability on a case by case basis. All decisions to allow data that did not fully comply with QC criteria or QAPP requirements will be explained, and any resultant limitations on data use fully discussed in the final project report.

Data Usability Determination

If 100% of all data reviewed is found to have been collected and entered correctly according to the QC criteria, data will be considered usable. Should this not be the case, the Project QA/QC Manager will conduct a further review of the data sheets resulting in the review of a total of 25% of the data sheets to find common occurrences that may be able to be isolated from the data as a whole. For example, if the pH is found to fluctuate in an irregular manner in 10% of the data, giving results that are not reasonable and/or cannot be corroborated, but other parameters and data appears reasonable, all pH data will be rejected, but the remaining data will

be determined as usable and results not affected by noted QC issue. Should other procedures be found to be questionable in more than 10% of the sample data sheets, results will be qualified rejected.

Reporting

Reports

Project Leaders will submit quarterly progress reports to the NEIWPCC Project Manager containing

- Status information for individual tasks, including completed project activities and any outstanding issues that require resolution
- Sample collection records
- QC sample records
- Equipment calibration records
- Data reconciliation results and associated recommendations/limitations.

A final report to NEIWPCC should including the following:

- Summary of Major Project Components
- Data Use and Recommendations
- Project Conclusions

The above **project**-related materials will be kept by NEIWPCC for as long as possible and for a minimum of three years from the date of the final Financial Status Report to EPA, as stipulated by 40 CFR § 31.42.