

Partner Agency Application for Funding ~ FY 2023

Agency Name:	Lake Anna Civic Association (LACA)				
Physical Address:	None				
Mailing Address/PO Box:	P.O. Box 217				
City:	Mineral	State:	VA	Zip:	23117
Telephone Number:	(571) 393-7920	Fax Number:			
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Agency Main Contact:	Mike Gelber	Title:	Water Quality Program Manager		
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Agency General Information

Agency Mission

The Lake Anna Civic Association (LACA) mission is to preserve Lake Anna and its watershed as a safe, clean, and beautiful resource through education, advocacy, community involvement, and water quality.

Number of years agency has been in operation	30
Localities Served	Spotsylvania, Louisa, Orange counties

REQUIRED items to be submitted with the application: *(include 1 copy of each)*

IRS 501(c)(3) Letter – Attachment 1

Audit Report *(with Audit Management Letter)* – Attachment 2

Current Financial statement – Attachment 3

IRS 990 – Attachment 4

Accountant Contact Information – Attachment 5

Organizational Chart – Attachment 6

Current Board Roster *(with contact information)* – Attachment 7

Agency's Current Strategic Plan – Attachment 8

Agency Overview

Purpose/Description

Provide County residents and users of Lake Anna an early warning system for water quality by regular sampling of water from 29 locations around the lake to form a comparative data base of trends in water quality and to notify VA DEQ/ VDH of samples that exceed quality standards as determined by VA DEQ. DEQ and LACA also monitor multiple locations on the lake for cyanobacteria, also called blue-green algae. Cyanobacteria can produce and release toxins that are harmful to humans and animals. The LACA cyanobacteria sampling protocol includes weekly sampling at multiple stations. The goal is to test all primary cyanobacteria stations once every 2 weeks. The cyanobacteria sampling stations are focused on the upper areas of the lake where the cyanobacteria and Harmful Algal Bloom (HAB) issues have been most prevalent.

SEE ATTACHED PROGRAM DESCRIPTION DOCUMENTATION

Justification of Agency and Requested Funding

Please state clearly why this service should be provided to the citizens of Spotsylvania County and why the County should consider this funding request.

LACA volunteers do all the labor at no cost. LACA requests grant funding from the surrounding counties to pay for the laboratory analysis of water samples, maintenance of equipment, and the supplies needed to execute the sampling projects (bottles, calibration solutions, printing, labels, etc.).

A major measure of performance providing justification for the request is that the funding for this project will serve all county residents and visitors to Lake Anna. All data is publicly available and special requests for data analysis or data sets for individual analysis is acted upon promptly by the LACA Water Quality Committee.

In terms of volunteer hours, the data provided below show the significant investment of LACA's members as a measure of performance for the LACA Water Quality Monitoring Program.

	CY18	CY19	CY20	CY21
LACA WQ Volunteer hours	900	925	1,650	1,445 (as of submission)

Program Collaboration

The following should describe, in detail, examples of collaborative efforts and key partnerships between your agency and other programs or agencies in the area.

Lake Anna and its surrounding area have been, and continue to be, a Spotsylvania County economic growth area. Spotsylvania County residents and businesses on and around the lake provide a significant tax revenue stream to the County and they provide employment opportunities to a significant number of County residents. The biggest risk to Lake Anna economic growth is a deterioration of water quality. If the lake becomes unusable for recreational purposes, property values will decrease, business income will decline and job opportunities will decline at best, and dry-up at worst.

The Spotsylvania County/LACA partnership provides the county a cost-effective means with a minimal investment to ensure Lake Anna water quality remains safe for recreational purposes. There is no labor cost to the County. All labor associated with LACA water quality activities is entirely volunteer. LACA volunteer hours in 2020 totaled more than 1,650 hours. The total volunteer hour investment for 2021 will equal or exceed the number of hours invested in 2020. Grant monies received from the County will only be spent on Virginia Department of Environmental Quality (DEQ) compatible test equipment, laboratory testing, and supplies

LACA works with DEQ as a certified collector of water quality data at Lake Anna. LACA's MOA with DEQ outlines each group's responsibilities and avoids any duplication of efforts. LACA works with the VA Department of Health (VDH) who issues "no swim" advisories when cyanobacteria levels exceed VDH levels of concern as we have seen in CY2018, CY2019, CY2020, and again in CY2021.

Additional Collaboration involved the following:

- LACA leads a stakeholder group of federal, state, and local agencies, academic institutions, Dominion Energy, and several industry partners focused on the cyanobacteria and HAB issues experienced at Lake Anna.

- LACA volunteers participated in multiple federal and state agency virtual seminars and conferences focused on cyanobacteria and HAB issues.
- LACA established several collaborative academic partnerships to focus on water quality and cyanobacteria/HAB issues. LACA's current academic partnerships include the Virginia Polytechnic Institute and State University (Virginia Tech), Old Dominion University (ODU), and Randolph-Macon College.
- LACA hosted researchers from the ODU Phytoplankton Analysis Laboratory for a lake reconnaissance in June of 2021. Water samples were collected in particularly troublesome "hot spots" in Spotsylvania County and returned to the lab for analysis.
- LACA is an active member of the York River and Small Coastal Basin Roundtable and the Roundtable's Science subcommittee.
- LACA hosted two undergraduate interns during the 2021 recreation season. One intern, from Coastal Carolina University supported LACA's Water Quality Monitoring Program from June through August during her summer break. The other student, from Virginia Tech, supported LACA's cyanobacteria monitoring project from September through October.

Collaborative Impact

Please describe how the community would be impacted if your agency were dissolved or merged with another partner agency.

Spotsylvania residents and recreational users of Lake Anna would not have the Water Quality information provided by LACA. Any unsafe conditions of the water would not be available and possible health issues could occur. Property values would decline with necessary tax revenue reduced to the county.

The funding addresses two main areas of need. The first area is LACA's water quality monitoring efforts that originated in 2002 based on the water quality impairments first documented in 1998 in several of the streams in the watershed. That LACA program has enjoyed a strong partnership with DEQ since its inception. We work closely with DEQ's Northern Regional Office in Woodbridge, VA for the collection of field and lab data at a large number of river, creek, and lake stations in the Lake Anna drainage area. Our program provides Level III quality data under the quality control of DEQ's Central Office in Richmond. This quality level of data allows its use in the DEQ assessments which list or delist waterways from the impaired listing. Lack of County funding would require a significant decrease in the number of stations monitored by LACA.

The second area that this funding supports is the cyanobacteria issue confronting Lake Anna, a continuing and growing issue. This need area concentrates on collecting water samples for analysis using LACA owned equipment. LACA is working to develop a data base with statistically significant numbers of data points so that sources, or root causes, of the cyanobacteria issue can be identified. Lack of County funding will significantly impact LACA's ability to continue executing this project over the long term.

Agency Overview *cont'd*

Program Audience and Service Delivery

The following should describe the agency's intended audience or client base and how those clients are served. This should include the location of the service and what geographic areas are served or targeted for service. If your agency has specific entry or application criteria, please describe it below.

All citizens and visitors to Spotsylvania County will have Water Quality data for Lake Anna. This has a significant impact of the safe recreational use of the water resources.

All LACA data are published on the LACA website and the Chesapeake Data Explorer (managed by the Chesapeake Monitoring Cooperative – see <https://cmc.vims.edu/#/home>) and shared directly with Virginia DEQ. All county individuals, homeowners and recreational users of the lake have direct access to information on water quality for the entire lake.

Community Impact

Please provide at least two examples of how your services have impacted members of our community.

Algae growths due to high nutrients in the water were reported in several locations in Spotsylvania County on Lake Anna. The most likely root causes for rapid cyanobacteria growth that results in algal blooms are high nutrient levels (phosphorous and nitrogen), high water temperatures and abundant sunlight. LACA worked collaboratively with DEQ over the entire recreational season to measure nutrient levels in the lake and in the creeks and streams in the Lake Anna drainage area. LACA also measures water parameters such as temperature, pH, and dissolved oxygen on a weekly basis during the recreation season. All this information is useful to state agencies such as DEQ and VDH as well as County residents that want to use the lake for recreational purposes (swimming, water sports, fishing, etc.).

LACA also works collaboratively with DEQ to track E. coli bacteria levels in the lake throughout the recreational season. High bacteria levels are normally found in the spring and decrease over time. The LACA Water Quality Monitoring Program provides data, along with DEQ monitoring, that provides County residents with information they need to understand if the water is safe to swim and conduct water sporting activities.

Client Fees

Please describe the fees clients must pay for the services provided by your agency, and how those fees are determined.

None – LACA is an all-volunteer service organization. All LACA data are published on the LACA website and the Chesapeake Data Explorer (managed by the Chesapeake Monitoring Cooperative – see <https://cmc.vims.edu/#/home>) and shared directly with Virginia DEQ. All county individuals, homeowners and recreational users of the lake have direct access to information on water quality for the entire lake.

Agency Financial Information

FY 2023 Total Agency Expenditures

	List Program Title/Name	Salary	Benefits	Operating Expenses	Capital Expenses	Total
Program 1	LACA Water Quality Monitoring Program	\$0	\$0	\$28,000	\$16,200	\$44,200
Program 2						\$
Program 3						\$
Program 4						\$
Program 5						\$
Total Agency Expenditures		\$0	\$0	\$28,000	\$16,200	\$44,200

- If your application includes funding increases for personnel (to include new positions or merit /COLA increases), please check here and explain in detail the need for this type of increase in the Salary/Benefits Costs section under Agency Budget Justifications.

Total Agency Revenues

	FY 2021 Actuals	FY 2022 Budgeted	FY 2023 Projected
Spotsylvania	\$7,000.00	\$7,000.00	\$10,000.00
United Way	\$0.00	\$0.00	\$0.00
Grants-DEQ	\$5,000.00	\$5,000.00	\$5,000.00
Grants-Dominion Energy	\$8,000.00	\$0.00	\$0.00
Client Fees	\$0.00	\$0.00	\$0.00
Fundraising	\$2,000.00	\$2,000.00	\$2,000.00
Other 1 (explain below)	\$0.00	\$0.00	\$10,000.00
Other 2 (explain below)	\$0.00	\$0.00	-
Total Agency Revenues	\$22,000.00	\$22,000.00	\$2,000.00

Detail below what is included in the 'Other' category:

Other 1: LACA submitted a request for \$10,000 for the FY23 Louisa County Budget Request



On the following page titled "Agency Budget Justifications", please indicate, in detail, reasons for increases or decreases in the amounts requested for FY 2023. Include whether these changes come from increases in personnel, benefits, or operating expenses. If an increase is being requested, please describe the impact not receiving an increase would have on the agency. In particular, please describe in detail if any increase is sought for new positions or personnel.

Agency Budget Justifications

Salary/Benefit Costs

In the box below, provide an overview of any increases or decreases in general personnel expenses for the agency. This would include any planned or projected merit or COLA increases, or new positions being requested. Also include a description of any changes to agency benefits structure or cost.

There are no increases personnel costs – LACA is an all-volunteer service organization.

Operating Costs

In the box below, provide an overview of the administrative costs detailed on the Total Agency Expenditures table for the agency as a whole. Please provide justification for and specific amounts of operating costs that are defrayed by locality funds. If your agency is requesting an increase or decrease in operating funding, please describe, in detail, the reasons for these changes.

The amounts detailed in the Total Agency Expenditures do not include any administrative costs. LACA administrative costs are funded separately through membership dues.

LACA is projecting fiscal year expenses of \$44,000. LACA expects \$27,000 of these expenses will be defrayed by grants and donations (Spotsylvania – \$10,000, Louisa - \$10,000, DEQ - \$5000, and Donations - \$2000).

LACA water quality testing expenses have been increasing, resulting in LACA increasing its water quality testing funding request from \$7,000 to \$10,000. The three primary reasons for the increase in expenses are:

- LACA has initiated and expanded a cyanobacteria monitoring and analysis program in addition to its historical testing of water quality parameters (E.coli, pH, dissolved oxygen, etc.)
- Water quality test equipment has not been achieving expected five-year life and new equipment that is compatible with DEQ operated equipment costs more than previous generation equipment
- The overall cost of supplies and laboratory testing has been increasing.

Even with this increased request from Spotsylvania County and the request to Louisa County to help fund water quality testing activities, LACA will be raising its dues and will be seeking donations from the community to close the projected \$17,000 fiscal year deficit.

Capital Outlay Costs

In the box below, provide an overview of the capital costs detailed on the Total Agency Expenditures table for the agency as a whole. Please provide justification for and specific amounts of capital costs that are defrayed by locality funds.

Capital cost of \$16,200 dollars are included in Total Agency Expenditures. These are cost to replace/ repair/ update scientific instruments used in the collection of field parameters for water conditions and for LACA laboratory equipment used in the cyanobacteria monitoring project.

Agency Budget Issues

Please detail below any legislative initiatives or issues that may impact the agency for the upcoming year and how you are planning for them. This could include new legislation that may increase or decrease projected funding at any level (Federal/State/Local), or could affect grants or designated funds as they are currently received. If you are aware of “outside” funding sources that will expire or be reduced on a set cycle or date, please note those below and how you are planning for them.

LACA is working with several state, local and academic partners to identify funding to research and identify the root causes of the cyanobacteria issues confronting the lake. Possible county and state legislative funding may be requested to support a large effort in finding root cause of HAB and remediation efforts. LACA is investigating conducting a fund-raising activity to support a major effort in the mitigation, remediation, and prevention of cyanobacteria issues.

Please detail below any identified agency needs or areas of concern that are currently not being addressed in your funding request. This could include training or technical assistance for specific areas, administrative support for a program or service, evaluation of current programs, or consultation for strategic planning, board support, or fundraising.

Lake Anna is experiencing a problem with the growth of cyanobacteria (“blue-green algae”), which can release toxins into the water. As a result, LACA, DEQ, and VDH have been monitoring part of the lake for the presence of toxic algae and has issued no swim advisories for some parts of the lake including its crown jewel, Lake Anna State Park when algal blooms have been detected.

As a result, there has been much concern over the safety of the water, by residents, local businesses that count on visitors to the lake for their livelihood, and to the several State Agencies responsible for water quality. LACA’s Environmental Preservation and Water Quality Committees have researched lake history, held informal discussions with multiple lake stakeholders and partners such as the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), the United States Geological Survey (USGS), VDH, DEQ, Virginia Department of Conservation and Recreation (DCR), Virginia Department of Wildlife Resources (DWR), the counties of Louisa, Orange and Spotsylvania, and colleges/universities including Virginia Tech, ODU and Randolph-Macon College.

Other Agency Information?

Is there any additional information that the agency would like to provide, and that hasn't already been provided in this application, that will help Spotsylvania County in the review of your application and funding determination?

Spotsylvania County has been a good partner in providing funding for the LACA Water Quality Monitoring Program. This partnership, along with the LACA volunteers, and the Lake Anna partners and stakeholders mentioned in this grant request are all necessary to keep the program working.

Program Service Data:

Service Period:

July 1, 2020

to

June 30, 2021

Locality Served	Total Served		Gender		Race					
	FY2020	FY2021*	Male	Female	Caucasian	African American	Asian	Hispanic	American Indian	Other
Fredericksburg										
Caroline										
King George										
Spotsylvania	ALL	ALL								
Stafford										
Other	ALL	ALL								
Total										

**Please include the projected number to be served in each locality for the upcoming fiscal year.*

Locality Served	Age Groups								Income Levels				
	0-4	5-10	11-13	14-18	19-25	26-40	41-60	60 +	Under \$10,000	\$10,000 - \$19,000	\$20,000 - \$39,000	\$40,000 - \$59,000	Over \$60,000
Fredericksburg													
Caroline													
King George													
Spotsylvania													
Stafford													
Other													
Total													

Please describe below your data collection methodology and tracking measures. Indicate systems or processes that are used and responsible parties. Please also describe how your projections are determined for the upcoming year. If any of the above information is not available, please indicate why:

PROGRAM DESCRIPTION

LACA conducts several complementary water quality projects under our overall Water Quality Monitoring Program. One project samples the water for E. coli, a major human health concern, and for water quality parameters that are critical to sustainment of aquatic life. Another project was initiated by LACA in response to the Harmful Algal Bloom (HAB) issue that has plagued the lake over the past four recreational seasons (2018-2021). The HAB issue at Lake Anna is due to cyanobacteria (also known as “blue-green algae”) populations growing faster in relation to other algae and aquatic species in the water column. High concentrations of cyanobacteria can harm both humans and their pets. A brief overview of these two projects is provided in the following paragraphs.

LACA Level III Water Quality Sampling Project: In partnership with DEQ, LACA volunteers collect water samples and field parameters at 25 lake and WHTF stations and 4 stream/creek stations in the Lake Anna drainage area. These stations complement and expand on the 8 lake and 12 stream/creek stations sampled by DEQ. LACA samples are collected in April, June, August, and October on dates that are pre-coordinated with DEQ. DEQ samples monthly over a period of ten months (usually Feb-Nov). A table showing the number of stations sampled by LACA and DEQ, by county, is provided below.

County	LACA			DEQ			% of Total Stations
	Lake	WHTF	Streams	Lake	WHTF	Streams	
Louisa	6	7	2	0		5	41%
Spotsylvania	7		0	4		3	29%
On Louisa-Spotsy Border	5		0	4		0	18%
Orange	0		2	0		4	12%
TOTALS	18	7	4	8		12	

LACA collects field parameters at each station using sophisticated, expensive equipment that is certified by the DEQ Quality Control Coordinator. Field parameters consist of water temperature, pH, dissolved oxygen, specific conductivity, turbidity (using a Secchi disk), and environmental parameters such as air temperature, sky conditions, rainfall amounts, and water clarity.

LACA also collects water samples that are sent to the Virginia Division of Consolidated Laboratory Services (DCLS) in Richmond for analysis. Water sample parameters include E.coli, total phosphorus, total nitrogen, and chlorophyll. LACA's engagement with the Virginia DCLS is formalized in a Memorandum of Agreement (MOA) that is updated on an annual basis. The laboratory parameters to be used by LACA and associated pricing for each type of sample analysis are fixed in the MOA.

Joint measurements with DEQ are outlined in a Memorandum of Understanding (MOU) that is valid through December 31, 2025. Other than for Quality Control purposes at one station, there is no duplication of effort with any other sampling accomplished on the lake, WHTF or in the streams and creeks of the Lake Anna drainage area.

The DEQ Northern Regional Office and DEQ Central Office provide guidance on sampling protocols and procedures, interpretation of results, and direction for future measurements. LACA prepares, manages, and updates a Protocol Manual covering all sampling procedures. LACA also prepares and updates a Quality Assurance Program Plan (QAPP) for the Water Quality Monitoring Program. DEQ reviews and approves the Protocol Manual and QAPP.

All LACA data are published on the LACA website and the Chesapeake Data Explorer (managed by the Chesapeake Monitoring Cooperative – see <https://cmc.vims.edu/#/home>) and shared directly with Virginia DEQ. All county individuals, homeowners and recreational users of the lake have direct access to information on water quality for the entire lake.

LACA Cyanobacteria Monitoring Project: VDH has issued “no swim” advisories related to cyanobacteria cell counts in each of the past four years (2018-2021). HABs have been documented on each of the three main tributaries north of the 208 bridge, the North Anna River, Pamunkey Creek and Terry’s Run.

LACA’s cyanobacteria project is approaching the cyanobacteria issue as a complex systems engineering problem that requires extensive scientific-based research, data science and analysis, and regular monitoring of water quality and environmental conditions. The cyanobacteria monitoring project delivers data that assists researchers and LACA data analysis activities in determining sources of nutrients in the watershed and the extent of cyanobacteria concentrations in areas identified as “cyanobacteria hotspots”.

LACA is working closely with VDH and DEQ to determine the root cause(s) of the lake’s HAB issues. Collectively, this

partnership is relying on water quality data (both current and historical) collected by LACA from Lake Anna, the WHTF and the streams and creeks in the Lake Anna drainage area. In addition to VDH and DEQ, LACA is collaborating on multiple cyanobacteria activities with its academic partners Virginia Tech, Old Dominion University, and Randolph-Macon College and with the Department of Conservation & Recreation (DCR) and Department of Wildlife Resources (DWR).

In support of its cyanobacteria data collection and analyses activities. LACA has invested heavily in developing a local capability to monitor and analyze water samples for the presence of cyanobacteria and the toxins they may produce. We currently have an instrument called the CyanFluor that provides concentration measurements for chlorophyll and phycocyanin, a pigment like chlorophyll that is only found in cyanobacteria. We also have a laboratory grade instrument called the MQ Reader. This device allows LACA to analyze water samples for two of the toxins that can be released by certain cyanobacteria species.

All data generated in this project are published on the LACA website and are shared with DEQ, VDH, Louisa, Spotsylvania and Orange County governments, Virginia Tech, Randolph-Macon College, ODU, and any other stakeholder organization/agency that requests the data.

PROGRAM GOALS AND OBJECTIVES

The goal of LACA’s Water Quality Monitoring Program is to provide reliable, representative data of the water quality as an early warning system for any water quality problems. Achievement of this goal will allow the following objectives to be met:

- Agencies of the Commonwealth, Spotsylvania County, institutions, businesses, Lake Anna stakeholders, and County citizens have access to historical and current water quality information for the lake, WHTF and the streams and creeks in the Lake Anna drainage area.
- Academic researchers have access to water quality data (current and historical) that provides a basis for sound scientific research.
- LACA and our stakeholder partners have data that provides indications and warnings for water quality degradation. This includes monitoring and analysis for all types of water impairments monitored by DEQ and the United States Environmental Protection Agency (EPA) such as bacteria (E.coli), cyanobacteria (cell counts and toxin measurements), and nutrient levels above EPA levels of concern.

PERFORMANCE MEASURES

Performance measures for the LACA Level III Water Quality Sampling Project are reviewed and approved by the DEQ Central Office. All performance measures are documented in the QAPP that is approved by DEQ. A major measure of performance is that the funding for this project will serve all county residents and visitors to Lake Anna. All data is publicly available and special requests for data analysis or data sets for individual analysis is acted upon promptly by the LACA Water Quality Committee. In terms of volunteer hours, the data provided below show the significant investment of LACA’s members as a measure of performance for the LACA Water Quality Monitoring Program.

	CY18	CY19	CY20	CY21
LACA WQ Volunteer hours	900	925	1,650	1,445 (as of submission)

COLLECTIVE IMPACT

The concept of Collective Impact has been a hallmark of LACA’s Water Quality Monitoring Program since its inception. The preconditions for Collective Impact are all present. There is an urgency due to the health factors associated with water impairments across the Lake Anna drainage as well as the economic impacts these issues have on recreation, businesses, and home values. A large, diverse group of federal, state, and local agencies, academic/university institutions of higher learning, Soil & Water Conservation Districts (SWCDs), businesses, civic organizations and private citizens have come together to focus resources on the issues affecting the lake and its drainage area. These groups work together to leverage funding, authorities, equipment, research and laboratory facilities, and labor against a set of common goals. We are organized and are implementing the actions we have identified as necessary to achieve our goals.

An example of LACA’s commitment to Collective Impact is LACA’s participation as a funding partner to the three counties and the Lake Anna Advisory Committee (LAAC) for the sediment study conducted on the upper portion of the North Anna River. LACA successfully raised donations from our membership to help fund LAAC’s Phase 1 watershed study.

LACA is committed to working with partner and stakeholder agencies and organizations to improve water quality in Lake Anna, the WHTF and in the streams and creeks of the Lake Anna drainage area and we will continue to support additional solutions to solve cyanobacteria-related issues.