EVERETT | City Council Agenda Item Cover Sheet

Project title: Adopt a Resolution Waiving Public Bidding Requirements and Approving a Multiple-Year Sole Source Purchase of a MPC Buoy Algae Control System and Replacement Parts from LG Sonic Inc.

Council Bill # *interoffice use*

Agenda dates requested:
December 6, 2023

Briefing
Proposed action
Consent X
Action
Ordinance
Public hearing
Yes X No

Budget amendment:
Yes X No

PowerPoint presentation:
Yes X No

Attachments:
Resolution, Sole Source, Proposal, and Brand Name Standardization

Department(s) involved:
Procurement & Public Works

Contact person:
Theresa Bauccio-Teschlog

Phone number:
425-257-8901

Email:
tbauccio@everettwa.gov

Initialed by:
sh
Department head

Administration

Council President

Project:	Resolution to waive public bidding requirements
Partner/Supplier:	LG Sonic Inc.
Location:	Everett Water Pollution Control Facility (WPCF)
Preceding action:	None
Fund:	401 Public Works Utilities

Fiscal summary statement:

The anticipated spend is approximately $285,000 in year one for the MPC Buoy algae control system and installation, which includes Washington state sales tax. After year one, the estimated spend will be approximately $4,200 annually for support services.

Project summary statement:

Public Works requires a lagoon algae control system at the Water Pollution Control Facility (WPCF). Approval of the sole source resolution will allow Public Works to purchase the system, control the lagoon's total suspended solids, and stay in compliance with National Pollution Discharge Elimination System (NPDES) permit requirements.

The lagoons system at the WPCF can experience a large amount of algae growth due to the environmental conditions. The WPCF staff does not have an established process to control algae bloom at the lagoons.

By installing the MPC Buoy algae control system from LG Sonic, the City would proactively control lagoon algae with low, long-term costs and maintenance. Improving the water quality is part of the WPCF mission and vision to provide exceptional wastewater treatment, while ensuring a clean and natural resource for future generations.

Recommendation (exact action requested of Council):

Adopt the resolution waiving public bidding requirements and approving a multiple-year sole source purchase of a MPC Buoy Algae Control system and replacement parts from LG Sonic Inc.

RESOLUTION NO. 7960

A RESOLUTION waiving public bidding requirements and approving a multiple-year sole-source purchase of an Algae Control System from LG Sonic, Inc.

WHEREAS,

1. The City chose the MPC Buoy Algae Control system for installation at the Water Pollution Control Facility; and

2. LG Sonic Inc. is the sole supplier and owner of the MPC Buoy system and replacement parts; and

3. As long as LG Sonic, Inc. is the only authorized provider of the MPC Buoy Algae Control System and replacement parts, it is in the City's best interests to approve the sole source purchase for multiple years rather than on an annual basis.

NOW, THEREFORE, BE IT RESOLVED BY THE EVERETT CITY COUNCIL THAT:

There is clearly and legitimately only one source capable of supplying MPC Buoy Algae Control System and replacement parts at the Water Pollution Control Facility. The City hereby waives competitive bidding requirements and authorizes the purchase of the Algae Control System and replacement parts from LG Sonic Inc., which will extend for multiple years, in an amount of approximately $285,000 in year one and approximately $4,200 annually in years thereafter.

Judy Tuohy
_____
Councilmember introducing resolution

Passed and approved this 6th day of December, 2023.

_____
Council President

EVERETT
WASHINGTON

PROCUREMENT

SOLE SOURCE JUSTIFICATION
Purchases $10,000 & Above

When filling out a sole source, use this document as a guide to answer each section.

A sole source is defined as:
A purchase that is clearly and legitimately limited to a single source or supply.

A. If there is a way to draft the specifications so that more than one respondent will reply, it is not a sole source.

B. The use of sole source purchases shall be limited only to specific instances which are totally justified to satisfy compatibility or technical performance needs.

All sole source purchases shall follow the City of Everett Standard Procurement Policy & Federal Emergency Contracting Section 9.4.

I REQUEST THAT THE REFERENCED PURCHASE BE DECLARED A SOLE SOURCE PURCHASE.

Proposed supplier name and address: LG SONIC **201 Lackawanna Ave, Suite 222 Scranton, PA 18503**	**Estimated cost of goods or services:** **$285,000**
Purchase Requisition #:	**Cayenta Supplier #** **Or attach Supplier's W-9 Form**

This is a sole source purchase because (Check all that apply):

- ☒ **Licensed or patented** – supplier has a license or patent that makes them the sole provider.
- ☒ **One-of-a-kind** – there is no competitive alternatives available on the market.
- ☒ **Sole Distributor** – Supplier is the sole distributor for the region or municipality
- ☐ **Compatibility** – must match existing brand or equipment for compatibility.
- ☐ **Replacement part** – for a specific brand or existing equipment.
- ☐ **Warranty** – sole provider of factory authorized warranty service.
- ☒ **Unique design** – must meet physical design or quality standards.
- ☐ **Public Utility Services** – Necessary adjustment of utility facilities
- ☐ **Other** - _____

- If the justification for sole source is "Standardization" then additional supporting documentation must be provided. See Brand Name or Standardization Justification Form.
- Procurements of items which the City has established a standard of designating a brand name or manufacturer or by pre-approving via testing shall be competitively bid if there is more than one supplier for the item.

Describe the proposed goods or services.	**LG Sonic is a company that makes as ultrasonic emitter system for algae control.**
What are the specific necessary features that this supplier provides that are not available from other suppliers?	**Interactive Algae Control (IAC) is an algorithm used to detect algae concentrations and the system automatically starts making changes to the programming (see sole source letter). Specific frequencies are used to maximize and target specific effective programs. All sensors and emitters contain a wiper system that can clean every 30 minutes.**
Discuss how similar goods or services are unable to meet the required objective.	**Other ultrasonic emitter programs scan through thousands of programs and are not as effective for certain species of algae. There is an allot of exposure time wasted roaming through non-effective programs. Other ultrasonic emitters do not have the instrumentation or wiper system for frequent cleanings. Properly cleaned instruments are vital for monitoring, predicting, and control of algae. LG Sonic is the sole supplier and owner of the patented**

	control buoy called the MPC Buoy. LG Sonic is the sole owner of the monitoring services provided with this system (see sole source letter).
Describe your efforts to identify other potential sources.	Other sources were evaluated via the web and did not have the necessary specifications as above for optimum algae control.
List any other facts supporting the use of a non-competitive process.	Purchase of other competitor ultrasonic emitters without the adaptable programming with frequent cleaning capabilities on the sensors and emitters can likely cause noncompliance, resulting in potential violations on the City of Everett's NPDES permit.
Is this a one-time procurement? ☒ No* ☐ Yes	*If an on-going sole source procurement is required, include or attach an estimate that shows total annualized expenditure for each year.

PRICE REASONABLENESS (Check all that apply and attach back-up documentation)

I determined that the price is fair and reasonable because:

- ☐ I compared the proposed price to prices I previously paid for the same or similar goods and/or services. See PO # . Specify price:
- ☐ I compared the proposed price to current published catalog, price lists, or market prices as documented in the attachments and the proposed price is similar or less. Attach relevant documentation.
- ☐ I compared the proposed price to rough yardsticks, such as dollars per pound, per horsepower, or other units of measure and did not discover significant inconsistencies that warrant additional pricing inquiry.
- ☒ Based on my knowledge of the market, my experience of prior similar proposals, or knowledge imparted by technical experts.
- ☐ The price is set by law or regulations.
- ☐ Market research reveals that same or similar goods or services are available for a similar price.
- ☐ Other: _____
- ☐ Back-up documentation is attached.

Explanation of above-checked justification: There are no similar products on the market.

STATEMENT OF NEED AND CERTIFICATION:

My department's recommendation for sole source is based upon an objective review of the product/service required and appears to be in the best interest of the City of Everett. I know of no conflict of interest on my part or personal involvement in any way with this request. No gratuities, favors, or compromising action have taken place. Neither has my personal familiarity with particular brands, types of equipment, materials or firms been a deciding influence on my request to sole source this purchase when there are other known suppliers to exist.

I hereby certify that this justification for sole source procurement is accurate and complete to the best of my knowledge and belief.

_____

Signature (Requestor) Date10/26/2023

Printed Name: Derek Kerlee | Title: Wastewater Quality Process Analyst

DEPARTMENT DIRECTOR

Based upon the above, I authorize the sole source acquisition of the goods or services specified.

_____

Signature Date

Printed Name:_____

INFORMATION TECHNOLOGY – For any technology purchases including software

Based upon the above, I authorize the sole source acquisition of the goods or services specified. _____ Signature Date
PROCUREMENT MANAGER
Based upon the above, I authorize the sole source acquisition of the goods or services specified. _____ Signature Date

Note: If additional space is required, use additional sheets of paper and submit with this completed form.

9.1 SOLE SOURCE

Sole source procurements are governed by RCW 39.04.280(1)(a). Sole source procurements may be made directly from a sole source supplier without soliciting additional competition if there is clearly and legitimately only one source capable of supplying the commodity that result in only one source.

In the event the commodity is available from only one supplier, a Sole Source Justification Form must be completed and provided to the Procurement Manager.

When a single or annual proposed sole source purchase exceeds the Council authorization limit, the Purchasing Manager must seek the City Council's approval, by resolution, that there is only one source. The resolution will recite the factual basis for the exception from competitive procurement.

LG Sonic US, LLC

201 Lackawanna Ave. Suite 222 Scranton, PA 18503

Sole Source Letter

30th May 2023

To Whom it May Concern:

This letter is to confirm that LG Sonic is the sole supplier and owner of a patented algae control buoy called the MPC Buoy. This system has an algorithm that changes treatment frequencies & programs based on the water quality data that is downloaded every 30 minutes. LG Sonic is also the sole owner of the monitoring services provided with this system. There is no similar products on the market.

The MPC Buoy and its replacement parts are manufactured by LG Sonic.

You can find more information about our intellectual property at www.lgsonic.com/terms.

Greg Eiffert

Director – LG Sonic US, LLC

570.996.7282

g.eiffert@lgsonic.com

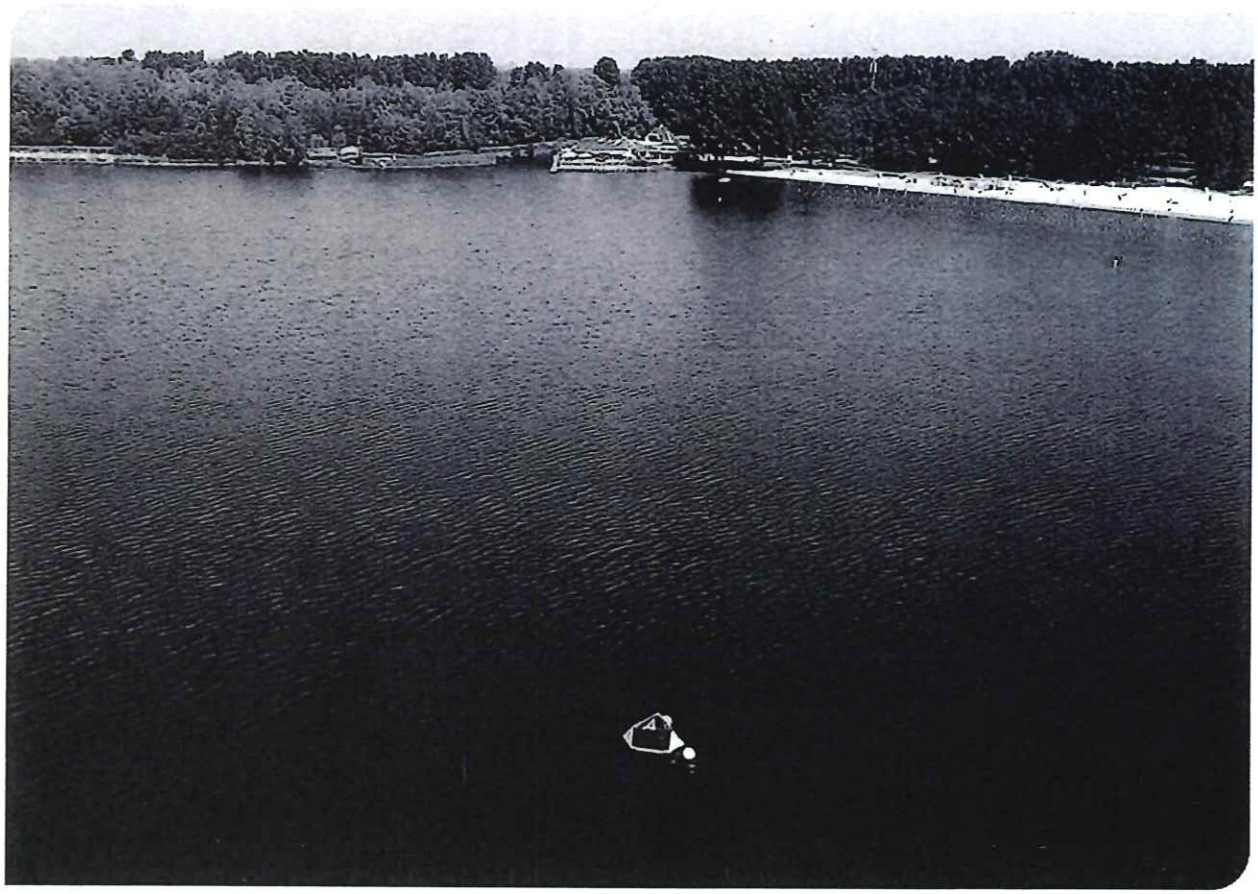
Derek Kerlee
Water Quality Process Analyst
City of Everett – Water Pollution Control Facility
Procurement Sole Source Justification

LG Sonic US – Estimated yearly expenditure (high end).

• Sim Card : yearly fee per MPC – buoy	330.00	Quanitity 4	1320.00
• 1 – year Interactive algae control services			
Each MPC-Buoy Pro	1080.00/yr	Quantity 2	2160.00
Each MPC- Buoy Lite	360.00/yr	Quantity 2	720.00
	Estimated Total Yearly Costs:		**$4200.00**

LG SONIC
Leading in ultrasonic algae control

Algae Control Proposal



HDR – City of Everett

Prepared by
Greg Eiffert
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10 / 09 / 2023 14:39

LG Sonic US
201 Lackawanna Ave.
Suite 222
Scranton, PA 18503

Executive summary

In this proposal you will find an installation advice for monitoring and controlling algae in Everett Reservoir.

Benefits for ultrasonic algae control

- Reduce algal blooms by up to 70-90%*
- Prevent growth of algae
- Reduce chemical use
- Payback period of ±1.8 years

Ultrasound technology

In all water bodies, a basic level of algae is present. These algal concentrations belong to the normal lake ecology and are also important for the ecological balance within the water. However, when a specific algal type starts growing exponentially, it can suffocate other organisms within the water that are important for a balanced lake ecology. The ultrasonic algae control devices from LG Sonic emit specific ultrasonic parameters to control algae in lakes, reservoirs, and industrial applications. Ultrasound waves create a sound layer in the top layer of the water, which has a direct impact on the buoyancy of the algae. The algae cells will sink to the deeper and darker layers of the water column and are unable to photosynthesise, thus will eventually die due to a lack of light.

The advantages of ultrasound technology

- No release of toxins
- Environmentally friendly
- Safe for fish, plants, zooplankton and insects

Project proposal

Based on the dimensions the reservoir, we advise to install a total of 4 systems MPC-Buoy. The system MPC-Buoy is a floating, solar powered, platform that combines continuous online water quality monitoring, web-based software, and ultrasonic technology to effectively control harmful algal blooms in large water surfaces, such as lakes and larger ponds.

Similar projects

AMERICAN WATER

SOUTH WEST WATER

NIPSCO
A NiSource Company

*In optimal conditions, depends on the specific water quality characteristics.

Table of contents

1. Treatment proposal

The algae control systems developed by LG Sonic offer an environmentally friendly solution to control algae by making use of ultrasound waves.

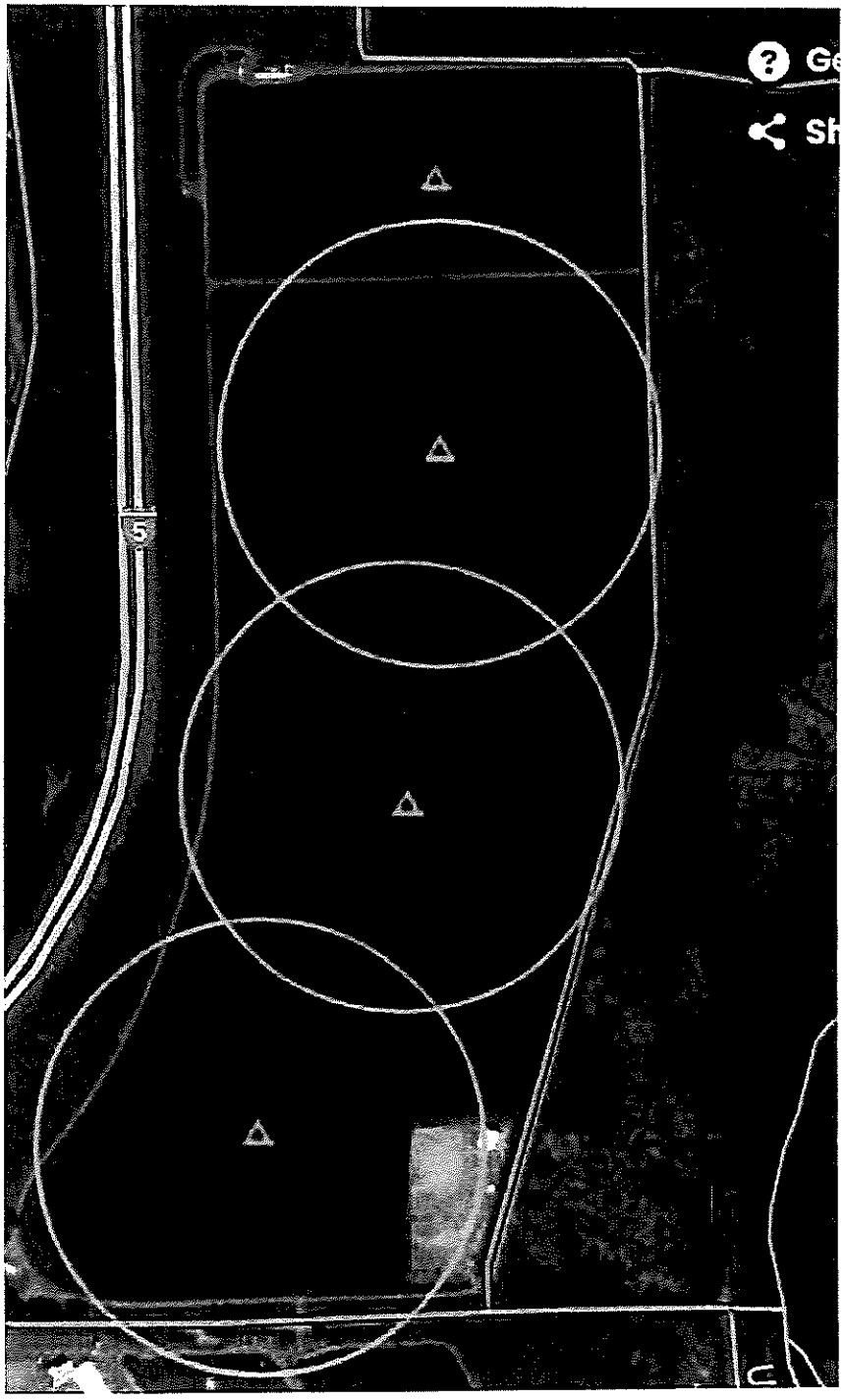
1.1. Proposed solution

Based on the dimensions of Everett Reservoir, we advise the installation of 4 MPC-Buoy systems.

One MPC-Buoy system can treat large surface areas up to 1600ft/50 acres in diameter coverage. The MPC-Buoy is anchored in the centre of the water body, ensuring correct coverage of the ultrasound waves.

1.2. Proposed installation

Below you will find an installation proposal to reduce the algae level in Everett Reservoir. A total of 4 MPC-Buoy systems should be anchored in the water. The blue circles indicate the MPC-Buoy treatment area. Is is recommended in the larger portion, to have 3 buoys, one Pro buoy with monitoring and 2 lite buoys. The MPC-Buoy Lite systems do not contain water quality sensors since it is not necessary to measure the water quality every 1600ft; this way, we can offer our customers a more cost-effective solution. Each buoy system has a treatment range of 1600ft/50 acres diameter coverage.



FAQ

Is ultrasound harmful for fish, plants, zooplankton, or insects?

No. The effects of LG Sonic products have been tested by various universities and are proven to be safe for fish, plants, zooplankton, and insects.

What happens to the algae after the ultrasonic treatment?

The ultrasound creates a sound layer in the top layer of the water. This ultrasonic sound barrier prevents the algae from rising to the surface and absorbing light for photosynthesis. Therefore, algae are no longer capable of growing further. The algae will die while the cell wall remains intact, preventing the release of toxins from the algae into the water. The algae will sink to the bottom of the water reservoir and are degraded by the bacteria present.

Does the algae release toxins in the water?

Algae control by ultrasound is based on the interference with their buoyancy and hence preventing their photosynthetic activity. Ultrasound does not break or lyse the cells, and as such toxins are not released into the water. As the ultrasound process is generally a longer process (3-4 weeks) and growth of new algae is being prevented, you can see a gradual reduction in toxin concentration once ultrasound is introduced.

How is the system installed?

The MPC-Buoy is anchored in the water reservoir. Each system has 4 ultrasonic transmitters ensuring complete 360-degree sound coverage.

Do you want to receive more information or have any other questions? Please contact your account manager.

1.3. Initial costs

Table 1: Total project costs

Product details	List price	Quantity	Subtotal
MPC-Buoy Pro	$57,600.00	2	$115,200.00
MPC-Buoy Lite	$50,700.00	2	$101,400.00
Anchor system Complete anchor system incl. anchor, D-shackles, marine rope, sinker, galvanized, chains and swivels	$3,860.00	4	$15,440.00
Sim Card SIM Card: yearly fee per MPC-buoy	$330.00	4	$1,320.00
Transport Transport	$17,600.00	1	$17,600.00
Installation and Set up LG Sonic	$6,900.00	1	$6,900.00
		Grand total	**$257,860.00**

Table 2: Product/service description

Product/Service	Amount	Included
MPC-Buoy	2	• Ultrasonic treatment • Water quality sensor package • Solar panels • 1-year of interactive algae control services • Web-based software package • Floating buoy construction

Product/Service	Amount	Included
MPC-Buoy Lite	2	• Ultrasonic treatment • Solar panels • 1-year of interactive algae control services Web-based software package • Floating buoy construction The MPC-Buoy lite receives ultrasonic program updates from the MPC-Buoy in lakes where more than one buoy is required
Installation	1	Installation supervision and start-up of the software

Recommended by LG Sonic

Table 3: Recommended product/service description

Product/Service	Amount	Included
Anchor system	4	Complete anchor system incl. anchor, D-shackles, marine rope, sinker, galvanized, chains and swivels
Sim Card	4	Annual Data download
Solar-powered warning light	Optional	Marking of algae control systems in lakes and reservoirs

1.4. Maintenance and annual service costs

The sensors and ultrasonic transmitters on the MPC-Buoy are all equipped with wipers to ensure they stay clean. This keeps the efficiency and specificity of the MPC-Buoy optimal and makes frequent maintenance to the system redundant.

Besides that, the technical status of the system can also be monitored through the MPC-View software, minimizing visits to the MPC-Buoy itself. What is left for maintenance is the calibration of the sensors. LG Sonic can do this for you simply by you sending the sensor package to us once a year.

We recommend performing an on-site physical inspection bi-monthly to check the state of all the parts comprising the MPC–Buoy.

Table 4: Maintenance and annual service costs

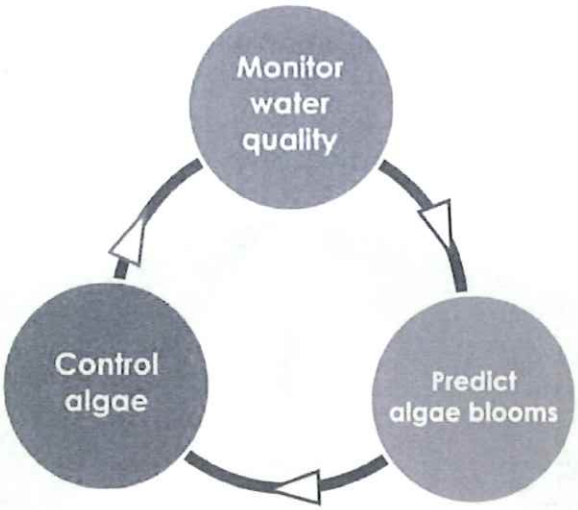
Type	Included	Costs
Interactive algae control services	· Interactive algae control services · Data management · Web hosting · Setup of server · Software licensing	The first 12 months are included in the price. After 12 months, use can be paid for on a yearly basis: Project service costs of $6,120/year + · Each MPC-Buoy Pro: $1080/year · Each MPC-Buoy Lite: $360/year
Calibration of the water quality sensors	· Fluorobrobe (phycocyanin, turbidity, Chlorophyll a) · DO sensor · Replacement of pH cartridge · Revision of sensor wiper engine	$3,400 / three years

Table 5: Interactive algae control service – annual cost starting from the second year of the project

Product details	Price price	Quantity	Subtotal
Project service costs	$6,120.00	1	$6,120.00
MPC-Buoy Pro	$1,080.00	2	$2,160.00
MPC-Buoy Lite	$360.00	2	$720.00
		Subtotal	**$9,000.00**
		Grand total	**$9,000.00**

2. Specifications

2.1. Concept: monitor, predict and control algae
2.2.



The MPC-Buoy is specially designed for large water surfaces and combines online water quality monitoring, web-based software and ultrasound technology to provide complete and cost-effective treatment against algae in lakes, ponds and drinking water reservoirs.

1. Monitor water quality

The MPC-Buoy provides a complete overview of the water quality by collecting the following parameters every 10 minutes: Chlorophyll α (green algae), Phycocyanin (blue-green algae), pH, Turbidity, Dissolved Oxygen, and Temperature.

2. Predict algal blooms

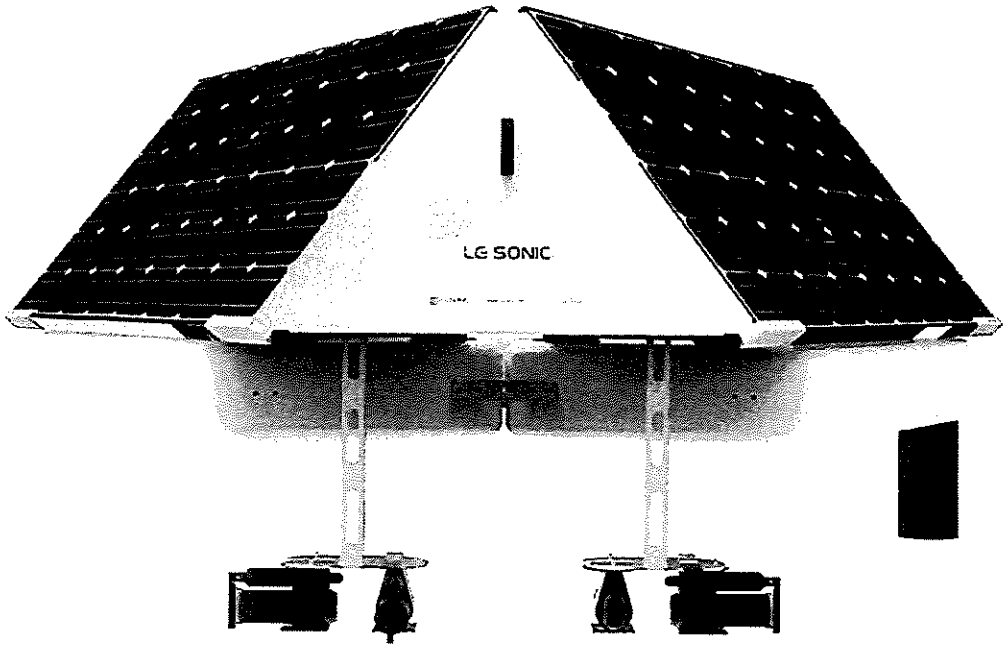
The collected data is delivered in real time via radio, GPRS, or 3G to web-based software. Based on our developed algorithm we are able to modify the ultrasonic program to the specific water conditions and predict algal blooms a few days ahead.

3. Control algae

Based on the received information, the ultrasonic program can be activated according to the water conditions and type of algae present. In this way, it is possible to eliminate existing algae and prevent the growth of new algae.

2.3. Key system elements

1. Ultrasonic treatment
2. Water quality sensor package
3. Solar panels
4. Floating construction anchored at the bottom of a lake
5. Data communication for remote control
6. Water quality software package

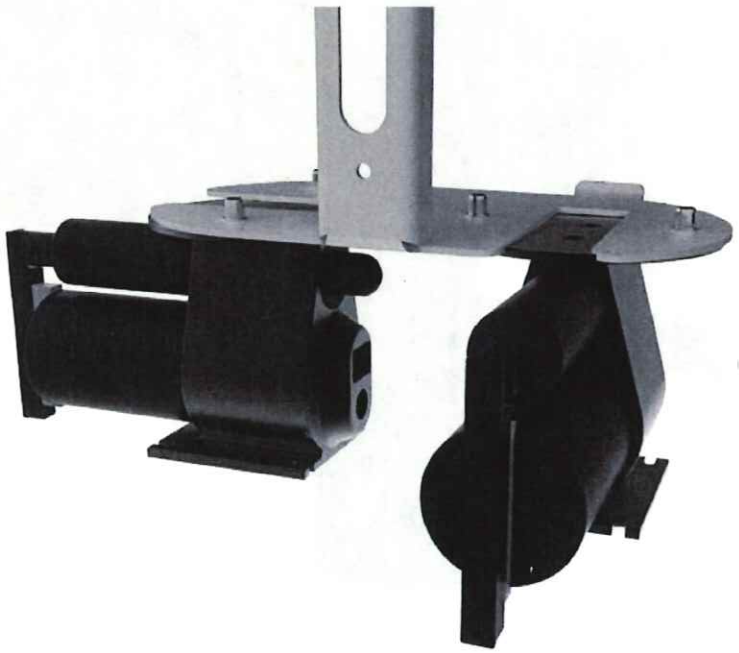


1. Ultrasonic treatment for algae control

The MPC-Buoy is equipped with 4 ultrasonic transmitters for 360-degree algae control. Each transmitter has an ultrasonic treatment range of 1600ft/50 acres in diameter. Based on the measured water quality data, the system can remotely activate the right ultrasonic program. Web-based software (MPC-View) allows users to visually track the water quality and the progress of the ultrasonic treatment.

The transmitters send ultrasonic sound waves of several specific frequencies, amplitudes, waveforms and durations into the water. The specific ultrasonic waves create a sound layer in the top layer of the water, which has a direct impact on the buoyancy of the algae. The algae cells will sink to the deeper and darker layers of the water column and are not able to photosynthesize and will eventually die due to a lack of light. However, for the efficiency of the technology it is important that specific frequency programs are used, based on the algae that require a control strategy.

Affected algae cells will sink to the bottom of the water reservoir, where they will be degraded by the bacteria present in the soil. After 3 to 4 weeks, the LG Sonic® devices control the growth of new algae from 70% to 90%. The LG Sonic products are not based on cavitation; the LG Sonic technology uses low-power ultrasound to control algae growth. This prevents the release of algal toxins into the water.



4 ultrasonic transmitters for complete 360-degree algae control

- **Treatment range of 1600ft/50 acres in diameter**
- **Integrated Aquawiper™, an automatic cleansing system for the ultrasonic transmitters**
- **Chameleon Technology™, adjusts the ultrasonic program to the specific water conditions**

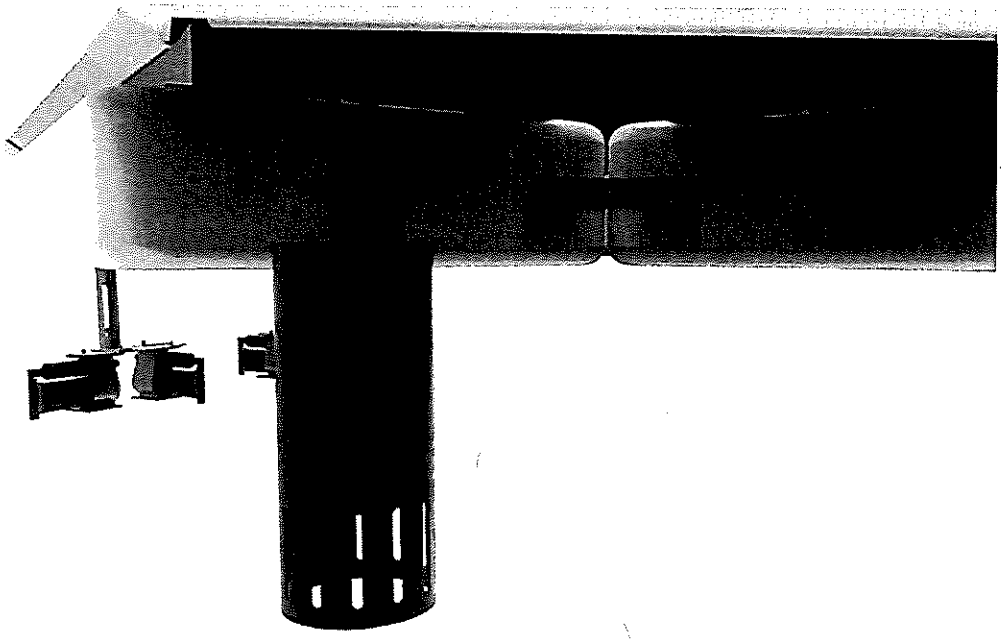
2. Water quality sensors for effective algae control

The MPC-Buoy is equipped with a set of sensors that monitor important parameters of your water quality in real time. The basic set of sensors are:

- Chlorophyll a (Algae)
- Phycocyanin (Blue-green algae)
- Dissolved Oxygen
- Turbidity
- Temperature
- pH

*Optional sensors are available based your needs and preferences.

These sensors can be used to provide a good overview of the concentration and type of algae present in your water reservoir. Besides that, levels of pH, temperature and turbidity can be used to predict the formation of new algal blooms and anticipate them before any problems arise. Levels of Dissolved oxygen provides you with vital information about the health of your water and condition of fish and plants within the lake.



In-situ water quality sensors to provide real-time water quality data

- **Monitors chlorophyll a, phycocyanin, DO, turbidity, temperature and pH**
- **Automatic antifouling wiper ensures optimal readings**
- **Optional sensors are available according to your needs and preferences**

3. Solar panels for power supply

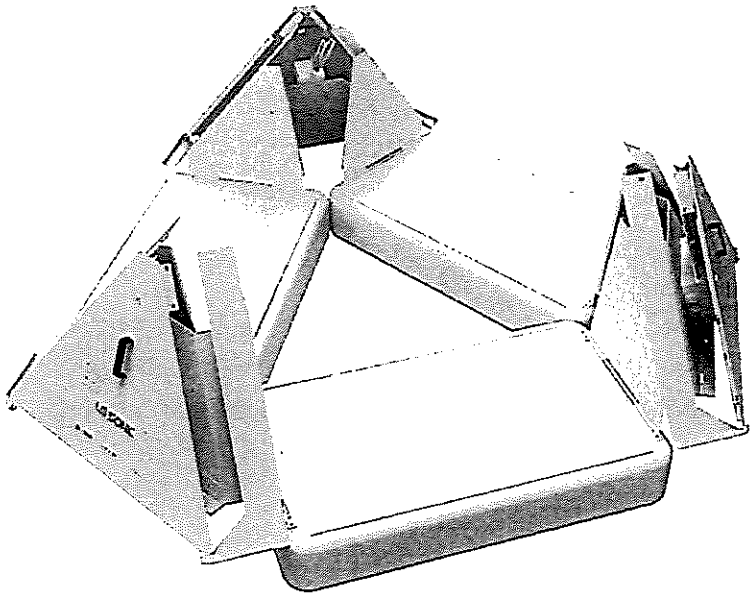
The MPC-Buoy is equipped with 3 solar panels of 195 Wp and 40-amp lithium batteries for autonomous power supply. The device has a power consumption of 5-20 Watts. The MPC-Buoy can provide power all year round anywhere around the world. During low battery charge, the device automatically powers off the ultrasonic transmitters. Furthermore, the device automatically switches to an energy-saving program during periods of low sun radiation.

Solar panels for autonomous power supply

- **3x 195 Wp high-quality solar panels that provide power, all year round in any country**
- **1x 24 Volt, 40 AMP lithium battery**
- **Switches to energy-saving program during periods of low sun radiation**
- **Solar regulator**

4. UV- resistant buoy construction

The MPC-Buoy system consists of three unsinkable floats that carry the weight of the system. The aluminium powder coated frame is both UV and corrosion resistant. Because the construction is relatively light (250 kg), you only need a small boat to drag the device to the required installation spot, where the unit can be installed and moored.



Floating construction anchored to the bottom of a lake

- **Aluminium powder-coated frame**
- **UV and corrosion resistant construction**
- **Unsinkable floats**

5. Data communication for remote control

The LG Sonic data logger is designed specifically for its application in a watery environment, where monitored data needs to be continuously delivered. The LG Sonic datalogger will communicate with the online software from LG Sonic (MPC-View) through a 3G data connection. Other data connections are available on request (GPRS, Satellite).

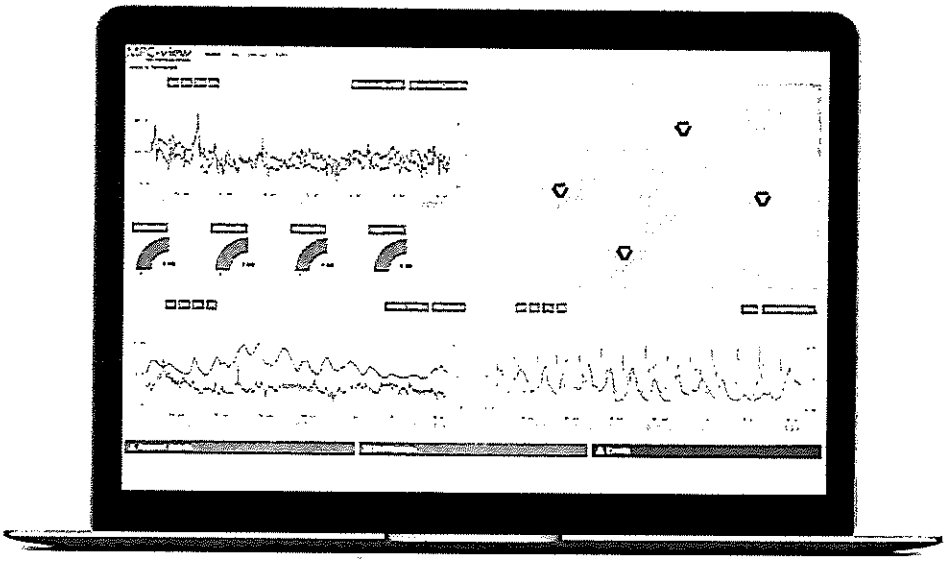
Smart communication system for remote control

- **3G (CDMA, Radio, GPS and Iridium Satellite optional)**
- **Real-time water quality data with the MPC-View software**
- **Integrated alarm functions**

6. Water quality software package: MPC-View

The MPC-View software allows you to visually track the water quality in your lake or reservoir. The software receives its data from advanced water quality sensors that are integrated into the MPC-Buoy.

You can log in to the software where you will find a personal dashboard displaying an overview of your algae control projects. The software provides insight into the water quality, algae trends, and the progress of the ultrasonic treatment. Furthermore, the software displays technical parameters, such as the status of the ultrasonic transmitters, signal strength, and battery strength. This way, customers and employees of LG Sonic can remotely monitor to see whether the devices are working properly. Generated reports can be exported to Excel or converted to PDF, and from there they can be shared or published.

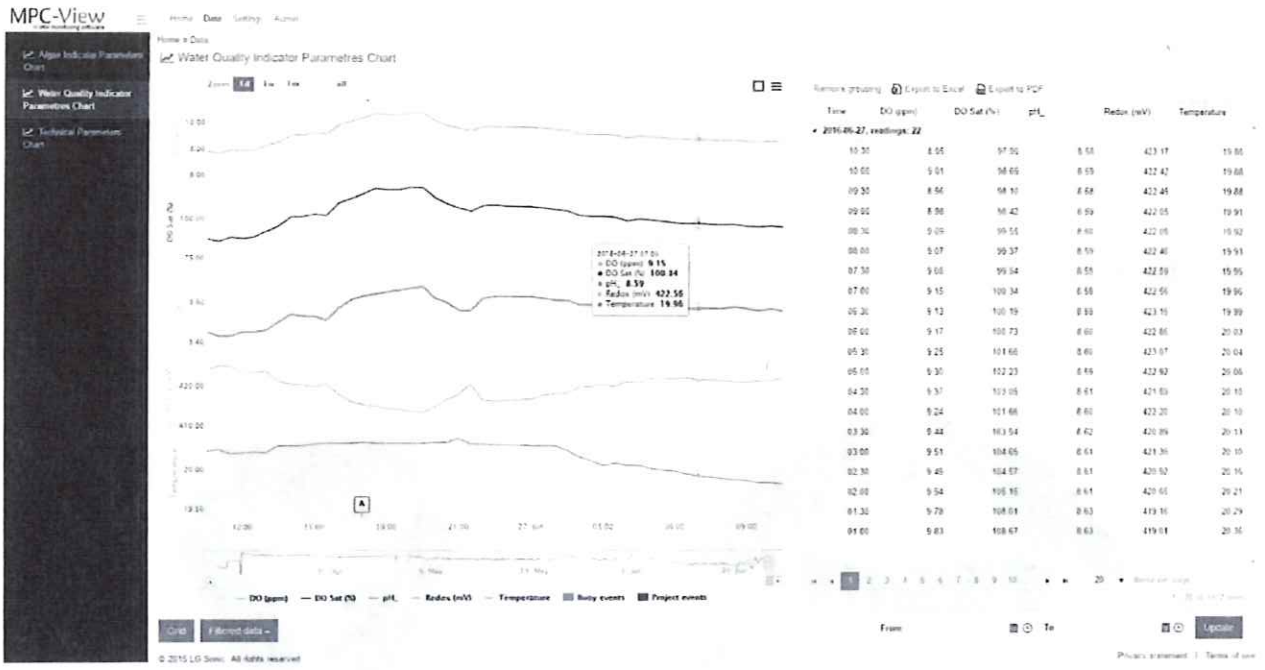


MPC-View

- Dashboard with an overview of the water quality
- Set up alarms for changing water conditions and maintenance activities
- Visual insight into various parameters at a specific moment in time

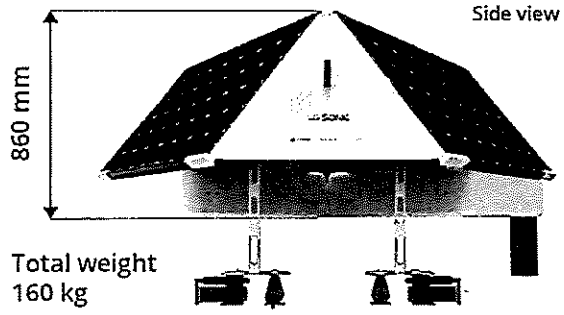
Dashboard with an overview of the algae control project

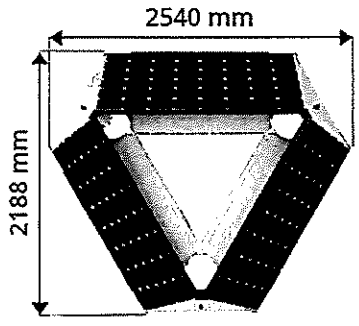
Visual insight into various parameters at a specific moment in time



2.4. Technical specifications

Frame	• Aluminum framed polyethylene buoy • Material: Rotationally-moulded UV-stabilized HDPE polyethylene • Filling: Closed-cell polyurethane foam • Buoy frame: Anodized aluminum • Weight: 15 kg • Size: 1200x600x200mm • Buoyancy capacity 95 kg
Solar panels (3x)	• Solar cell: Monocrystalline cell • Rated Power (Pmax): 200Wp • Weight: 16 kg • Connectors IP67 • Size: 1580x808x35mm
Battery	• 1 x 24 volt lithium lifepo4 • Capacity: 40 Ah • Weight: 15kg
Data acquisition system	• 4 x analog channel (user-configurable for either 4-20mA) • 1 x RS485 port for instruments • 1 x high frequency pulse counting channel • 1 SDI-12 input • 3X RS232
Telemetry	• 3G • Quadband (850/ 900 /1800 / 1900 MHz) • CDMA optional • Radio (UHF/VHF)
Solar Charge Controller	• Overcharge and Deep discharge protection • Ip68 Protection





Water quality sensor package

Fluorescence, including anti-fouling Wiper: chlorophyll a, phycocyanin, turbidity

- 470nm – Chlorophyll a
- 610nm – Phycocyanin
- 685nm Turbidity

Dissolved Oxygen

- Optical measure by
- luminescence
- Measure ranges:
- 0.00 to 20.00 mg/L
- 0.00 to 20.00 ppm
- 0-200%

pH

- Combined electrode
- (pH/ref):
- special glass, Ag/AgCI ref.
- Gelled electrolyte (KCI)
- Range 0 – 14 pH
- Resolution 0,01 pH
- Accuracy +/- 0,1 pH

Temperature

- Technology CTN
- Range 0.00 °C à + 50.00°C
- Resolution 0,01 °C
- Accuracy ± 0,5 °C
- Response time < 5 s

3. Delivery and warranty

3.1. Delivery method

Sea cargo/airfreight/road

Method of shipment: Delivery at Place (DAP)

Delivery time

The products will be shipped within 6 weeks after receiving payment. Shipping time depends on shipping method: 1 and 3 weeks

3.2. Warranty

LG Sonic BV, the producer, has great confidence in its products and guarantees the quality of assembly and materials used. The warranty is limited to materials and faulty construction and covers terms of ONE, TWO, THREE or FIVE YEARS after purchase date for different parts of the MPC-Buoy.

The system specifications and the assigned years of warranty coverage are listed in the table below:

System element	Includes	Years of warranty
Ultrasonic system	• Up to 4 LG Sonic e-line XXL transmitters connected to one control box • Treatment range of 1600ft in diameter • Ultrasonic treatment coverage of 360°	3
Water quality sensor package	Water quality sensors: pH, dissolved oxygen,temperature, redox, turbidity, chlorophyll a, phycocyanin.	1
Solar system	• 3x 200 WP solar panels • 2x 12 Volt, 40 AMP lithium batteries • Solar regulator	5 2 2
Buoy construction	• Aluminum-framed polyethylene buoy • Stainless steel construction for solar panel mount • HDPE enclosure for electronic box and batteries	3

4. LG Sonic company profile

LG Sonic is a highly innovative algae control solutions provider based in the Netherlands. Since 2011, the company has dedicated itself to development of environmentally friendly solutions to treat algal blooms in lakes and large reservoirs.

Environmental pollution

(Harmful) algal blooms have a tremendous negative impact on wildlife, domestic animals and humans living near infected lakes. While the problem is annually increasing globally, the severity of the consequences of algal blooms are becoming clear to public and regulators. At its source, lies years of environmental pollution.

Our vision

LG Sonic believes that solutions for severe environmental degradation do not lie in the addition of more chemicals or other components that pollute our lakes further. Instead, solutions should be used that support our lake's ecology, to establish a healthy aquatic ecosystem.

Our solutions

LG Sonic has established a line of water treatment solutions based on ultrasound technology. Combined with a line of smart water quality sensors, Remote Sensing (satellite imaging) to monitor water quality from space, and efficient aerating solutions based on Nanobubbles, LG Sonic's solutions work together to recover the ecology of a water body.

What we have accomplished so far

- Active in over 50 countries around the world
- Successful long-term treatment of lakes from 20 hectares to many square kilometres
- Winner of several awards such as Aquatech Innovation Award and Shell LiveWIRE Award.
- Four offices worldwide: the Netherlands, United States, United Arab Emirates and Brazil
- Solution provider to water utilities, (nuclear) power generation industry, recreational lakes and wastewater treatment plants.

4.1. Testimonials

AMERICAN WATER

"Extensive testing conducted during 2014 showed that the buoys had a significant impact on the algae, allowing the plant to reduce chemical consumption by more than 20 percent, and reducing the concentration of undesirable taste and odor causing compounds in the treated water delivered to customers".

Orren Schneider, Manager Water Technology

NIPSCO
A NiSource Company

"We were using both an algaecide (quaternary amine) and a UV-blocker at all our cooling towers. By the end of the season we eliminated using the UV-blocker chemical and we reduced the algaecide by 25%. We intend to reduce more in 2020 [with MPC-Buoy]. You have a quality product [MPC-Buoy] that has potential to help many customers such as ourselves. We enjoy working with quality people. "

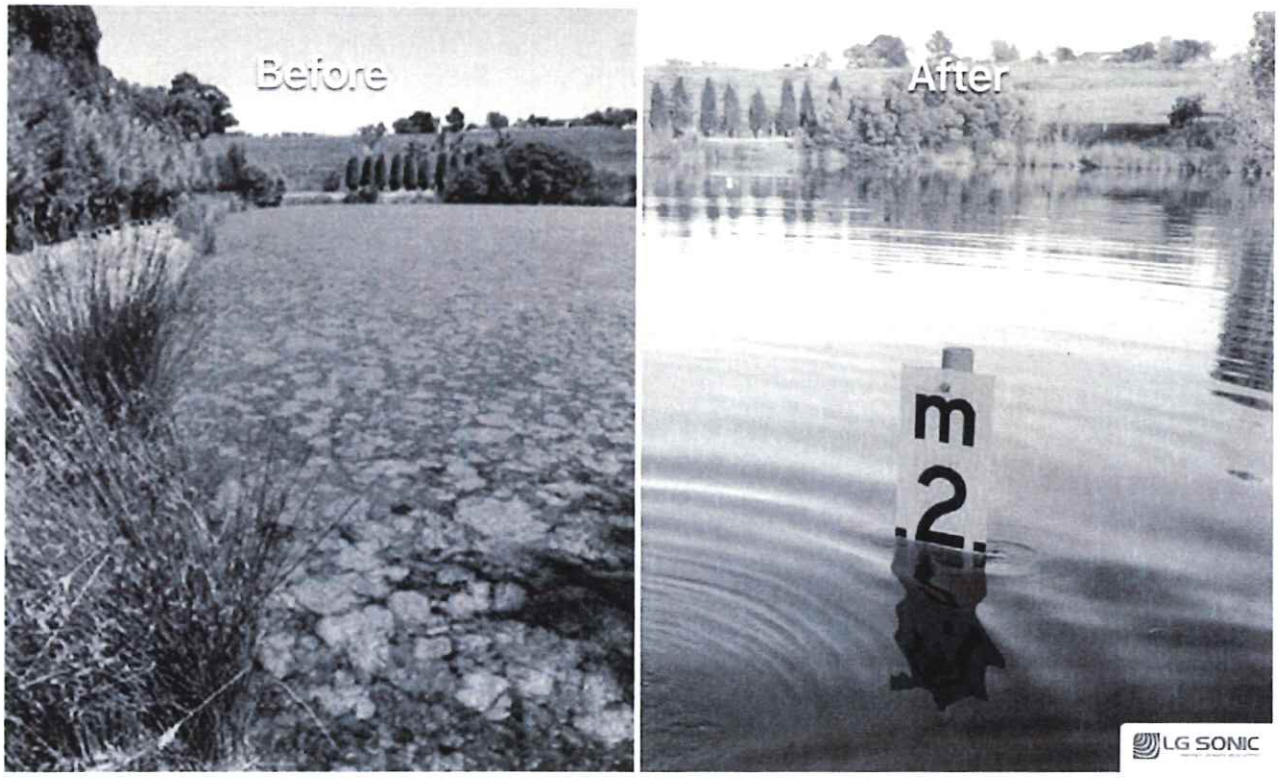
Brian Snyder – Senior Chemical & Environmental Specialist, NIPSCO

"The device performed excellently when dealing with blue-green algae.
[Reducing chemical costs by 27% in the first year] ".

Cathy Willets, Emmitsburg Town Manager

4.2. Results

Before (left) and after (right) since using MPC-Buoy systems in a recreational lake in the Netherlands.



Before (left) and after (right) picture of an irrigation reservoir in Australia since using LG Sonic ultrasound.

EVERETT
WASHINGTON

PROCUREMENT

BRAND NAME OR STANDARDIZATION JUSTIFICATION
Purchases Above $10,000

A brand name description is defined as:
A title, term, symbol, design or any combination used to describe a product by a unique identifier and its producer.

Standardization is defined as -
The adoption of a single product or group of products to be used by different entities or all parts of one organization. (Nash, Schooner, & O'Brien, 1998)

The agency understands that:

- Use of brand name descriptions and standardization is the least preferred type of specification as it limits competition and potentially equivalent products are not considered for award.
- Procurements of items for which the City has established a standard of designating a brand name manufacturer or by pre-approving via testing shall be competitively bid if there is more than one supplier for the item.

THE REQUESTER PROVIDES THE FOLLOWING JUSTIFICATION FOR REQUIRING

- ☒ **Brand Name justification**
- ☐ **Standardization justification**

What product are you standardizing: LG Sonic ultrasonic emitter.

This brand name or standardization is necessary because (Check all that apply):

- ☐ **Interchangeability**
- ☒ **Expertise**
- ☐ **Compatibility**
- ☒ **Maintenance**
- ☐ **Regulation/Law**
- ☐ **Uniformity**
- ☐ **Prior Functionality Testing**
- ☒ **Other** - __Automated cleaning devises are on all sensors and transmitters capable of 30 minute interval cleanings.
- ☒ **Other** - __Patented algae control system

Describe the reasons above.	**LGsonic ultrasonic emitters have a patented algae control buoy called the MPC Buoy. This system has an algorithm that changes treatment frequencies and programs based on the water quality data that is downloaded every 30 minutes. There are no similar products on the market. LGsonic emitters also have a cleaning system for all sensors and emitters that competitors do not have. This is critical for the EWPCF lagoons. LGsonic provides support via web-based monitoring to verify, correct, or advise as needed.**
Describe the process that the department used to verify or test that this was the only suitable	**Search efforts were made to find other competitive ultrasonic emitters for algae treatment and did not have the specifications as needed such as the all the sensors and emitters have self-cleaning capabilities. The adaptive programming to immediately treat specific**

solution. Attached additional sheets if necessary.	species of algae is not available with other competitors which is critical to prevent exposure time for new algal growth.
How was performance effectiveness demonstrated? Include existing conditions, prior history, and equipment longevity or durability.	Multiple references with similar pond environments were contacted with the same LGsonic ultrasonic emitters and have described their successes. Successes were due to the adjustable frequency in the programming and are working well to date.
If the standardization or brand name is not approved, what is the consequence to the agency? For example, additional costs or expenses that could be incurred.	The Water Pollution Control Facility does not have algae control. Algae blooms will continue to occur in the lagoon system and likely violate our NPDES (National Pollutant Discharge Elimination System) permit for excessive total suspended solids in the final treated effluent. A complete facultative lagoon upgrade with mixing and/or filtration would have to take place which would be a much greater cost to the city.
What are the associated risks of non-standardization?	Risks of not complying with our NPDES permit.
List any additional facts supporting the standardization or brand name justification.	LG Sonic is the sole owner of the monitoring services provided with this system.

STATEMENT OF NEED AND CERTIFICATION:

My department's recommendation for brand name or standardization is based upon an objective review of the product/service required and appears to be in the best interest of the City of Everett. I know of no conflict of interest on my part or personal involvement in any way with this request. No gratuities, favors or compromising action have taken place. Neither has my personal familiarity with particular brands, types of equipment, materials or firms been a deciding influence in this request.

I hereby certify that this justification is accurate and complete to the best of my knowledge and belief.

Signature (Requestor) Date 10/23/2023

Printed Name: Derek Kerlee | Title: Wastewater Quality Process Analyst

DEPARTMENT DIRECTOR

Based upon the above, I authorize the brand name or standardization of the goods or services specified.

Signature Date

Printed Name:_____

PROCUREMENT MANAGER

Based upon the above, I authorize the brand name or standardization of the goods or services specified.

Signature Date

Note: If additional space is required, use additional sheets of paper and submit with this completed form.

RES 7960_Algae Control System

Final Audit Report 2023-12-08

Created:	2023-12-07
By:	Ashleigh Scott (AScott@everettwa.gov)
Status:	Signed
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